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Saier's GARDEN MAGAZINE

A MANUAL OF RARE FLOWERS, THEIR SELECTION AND CULTURE

Vol. 4, No. 1.

July 1955.

25 Cents



Palms Growing at the Fairchild Tropical Gardens in Coral Gables, Fla.

Some Flowering Plants of Kenya
The Fairchild Tropical Gardens

40 YEARS
of
EXPERIENCE

The Akee as Grown at the Fairchild Tropical Gardens

In South Florida one finds a good many reversals of the customs of the most temperate regions, such as the fact that vegetables and annual flowers must be planted in the fall instead of the spring and ideas must change, also, to keep up with a new way of life. But if someone came unexpectedly on an Akee tree in full bearing in midsummer, looking like a decorated Christmas tree, he might think that things were going too far!

Here is a tree which has great ornamental value for its glossy, stiffish leaves, fragrant although inconspicuous flowers, and really sensational fruits. It is also widely used as a food in many places of the world.

The name Akee came to the New World with the tree, from its native West Africa. You probably remember the amazing true story of the mutiny on the *Bounty*, which reads like a sensational novel. But, perhaps, you have forgotten why HMS *Bounty* was sent from England to Tahiti in the first place. It was to bring to the West Indies some of the foods which grow so well in the Pacific islands, to help feed African slaves who the English had imported to work in the cane fields.

Capt. Bligh and the *Bounty*

After the unsuccessful voyage in which the mutiny occurred, and after Captain Bligh had sailed the unbelievable distance of three thousand miles in an open boat with the few men who remained loyal to him, he returned to the Pacific and accomplished his mission, bringing the lovely and valuable breadfruit tree (*Artocarpus communis*), to Jamaica and other West Indian islands. The Africans did not care especially for the breadfruit, however, so the Akee was introduced from Africa for their use. The botanists honored the dauntless captain by naming the tree *Blighia sapida*.

The Akee has been grown in Florida for quite a few years, but it is not planted as much as it deserves. It germinates readily from seed and comes fairly true to type—there is not as much variation in the various seedlings as one finds in other fruit, the mango, for instance. It makes a tree of medium size, with a stiff trunk and rounded head. When only a few years old it begins to bloom. The dainty sprays of tiny greenish white flowers appear all over the tree and the air is filled with the delicious odor of cloves.

The Edible Fruit

But it is when the pear-shaped fruits, about three inches long, hang on slender, flexible stems all through the tree, ripening where the sun strikes them to a rich sealing-wax red, that it attracts all eyes. These fruits are divided into three sections, with a thin seam marking each division. When the fruit reaches maturity it splits along these seams, opening wide at the base and exposing the shiny black seeds as large as marbles and the creamy meat or aril. This aril is the edible part of the fruit; it looks rather like the brain of some small creature, and in Spanish-speaking countries it is called *seso vegetal*, vegetable brains. When the seed and aril are removed from the husk one can see that they have been comfortably lying on a velvet couch, for the inner surface of the husk is lined with coral or apricot colored hairs soft to the touch.

After removing the seed and the papery red membrane which is tucked into the center of the "meat", each little brain should be examined carefully. If any soft or bad spots are found, that piece should be discarded. The firm, ivory colored pieces are then cook-

This article was sent in by the Fairchild Tropical Gardens at Coral Gables, Florida. Readers visiting Florida during the winter month should pay a visit to this garden where you will find some 1,090 species in 469 genera growing and all labeled.

with plenty of humus. Unfortunately, deep soil with lots of rotted vegetable matter is hard to find in the limestone areas of South Florida and one only too often sees a young *Blighia* set out in a small hole dug out of the rock with a pick. It will struggle along, root-bound and miserable from too much



Golden Feather or Butterfly Palm — *Chrysalidocarpus madagascariensis* (Areca)

ed and served as a vegetable. The preferred method of cooking is to melt a generous portion of butter in a pan, put in the Akee meats, brown them slightly, then lower the heat. Put on a top and allow them to cook very slowly until tender. They will look like a dish of scrambled eggs but will have a distinctive nutty flavor which most people enjoy.

Through a number of years of personal experience in growing the Akee, and a good deal of observation, I have come to the conclusion that there is one important point to remember in planting this tree, if one wants a fine specimen; give it lots of root room,

lime, the foliage yellow and unattractive, until its owner in disgust says, "That tree is no good; take it out," and there goes what might have been a gorgeous sight if only enough dynamite and rotted manure or compost had been used in the beginning.

The Akee has a reputation for being quite poisonous, but this quality is largely overrated. No one with commonsense will eat unripe fruit, nor are they likely to eat it when rotten. So a little care, that is, waiting until the fruits open of their own accord, and throwing away any meats that have begun to spoil, will be safeguard enough. J. J. Bowrey, an-

(Cont. on Page 386)

MARANTAS and CALATHES

By P. A. Girouard, Florida

Marantha formerly in the Scitamineae family which included Cannas, Bananas *Maranta* and Ginger. Presently recognized being Maranthaceae, which includes *Maranta* and *Calathea*. Some of them are listed as bromeliads and orchids but even tho some blossoms faintly resemble such, it is confusing to relate them. Botanical characters are different.

Maranta is regarded by the public as Arrow-root and this term is applied to *M. Arundinacea* of which there are two, one with green and the other with white banded leaves. This plant growing to 4 feet, strikes out boldly with joint-like angled stems; and when cut these joints are easily rooted.

Maranta Karchevana is a very beautiful short stemmed plant, a small plant compared to the other *Marantas*; producing its leaves compactly and overlapping and eventually covering the entire container.

The leaves are not round or square but appear to have attempted both form and then decided on an oval outline; the color a soft beautiful velvety green with dark blotches almost chocolate color, in square patterns, and aligned on both sides of the central vein. It is known by several vulgar names as 'the twelve apostles', the 'rabbit-track-plant', the 'prayer-plant', 'the-holy-plant', etc.

Nature's Marvelous Mechanics

A characteristic of *Maranta* is the folding elevating and nodding or reclining of its leaves at night. Some of nature's marvelous mechanics. This *Maranta* folds its leaves at night as tho in prayer.

Practically all *Marantas* and *Calatheas* are bicolor and is sometimes listed as *Maranta bicolor*.

Calatheas are noted for their exquisite colors and color combinations and the pleasing under color of the leaves, probably not another upright growing plant is their equal or rival. The leaves are from 4-15 inches long, according to the variety. On the end of the basal stalk is hinged or elbowed at the leaf-base by which they alter their position at night, thereby exposing the beautiful under-color of the leaf.

Calathea Zebrina, a dark green oval leaf with vivid lines in pairs arranged in herringbone effect on both sides of the central vein, first appearing pink and gradually turning bright silver; a striking contrast in color harmony. Known as the Zebra plant. The under color is a wine-red.

This pot plant growing to 18 inches high, allowed to multiply and crowd its roots, will develop clustered leaves and a beautiful plant in the home.

Calathea illustris

Calathea illustris has a slender oval, dark green, glossy leaf with white mid-rib, which underneath the leaf is of a beautiful velvet wine-red-purple color. When *Calatheas* are grown in pots they seldom throw out angled stems as do the *Marantas* but *Calathea illustris* is more generous in this respect and in some respects resembling *Orchids*.

C. undulata variegata is the most prolific grower of them all and during the past few years offered under other names. Leaves are of a soft green upon which is design of fern superimposed upon the center of the leaf in a lighter shade; the entire leaf undulate or waved and light purple undercolor.

We have a few other varieties showing a combination of colors, white, red, pink, green and various shadings, banded, spotted and otherwise marked, all colors vividly displayed on each leaf with pleasing wine, pink or red under color. This under color in fact seems to penetrate thru and affect the upper surface of the leaf. One such, is *C. rosea picta*. This is the most difficult plant to grow and resists propagation on the part of the writer and many other growers.

A low growing plant whose leaves are almost prostrate but spreading, generously displaying its color patterns. It is very rare and impossible to obtain. When found, it is difficult to keep; they slowly wilt away for no apparent reason.

Another similar species is *C. regalis*, of slightly larger leaf and upright habit, color patterns similar to the above, slightly harder but also resists propagation. Other similar species are *C. ornata* and *C. vittata*.

All the above *Calatheas* are evergreen.

C. Alloula is not evergreen; it ripens its leaves in late fall when the rhizome rests, then in spring it brings out its new beautiful leaves on a slender basal stem, of light pleasing green with a purple mid-rib and the vines appear prominently raised and as tho the whole leaf is plaited. I consider this plant along with the red leaf *Dracena*, to be the most beautiful of all conservatory plants.

Calatheas, with very few exceptions, come from tropical America; just how much cold they will endure. I do not know but on tests last winter, when left out in North Florida, they withstood varying temperatures of 34 to 80 degrees Far.

The rhizome when left in the ground, will endure, if not frozen. The majority of all species are of small size, permitting removal to the house or greenhouse for the winter.

When all the leaves are cut to the ground, the rhizome will throw many more stems and leaves than if not done, but the leaves will be smaller and some folks like them best this way, covering the pot more rapidly.

They require a loose porous, rich soil and plenty of water but good drainage. I obtain this with a mixture of peat, charcoal, course sand as is used for concrete. I feed them bone meal, castor pomace, rabbit or goat manure and iron rust. I use cans for potting most all plants and when repotting, I throw rusted cans in the concrete mixer with some rocks; the rust makes good fertilizer. Our concrete mixer is not for concrete—I mix my potting soils in it.

Use NO barn manure on *Calatheas* or *Marantae*; they want take it!

The Mole!

That little animal called the mole, gets a lot of publicity, on which he seems to thrive and multiply. The following is a good way to play with them, if you are looking for another method to 'eliminate' them. It is suggested in the North American Lily Society bulletin, that "a sure remedy" is to catch a snake; garter or bull-head snakes are harmless and won't bite (presume a rattler would be just as good, if bull-head snakes are not around and you can handle rattlers). Quoting: We handle them like we do kittens and open a mole run and put the snake in the run. They crawl around trying to get out and the moles leave in a hurry. I never could understand why so many people are afraid of them. (moles or bull-head snakes?) We often bring them home, but they won't stay, as they have homing instincts like cats and go back to where the snakes are just as turtles do. End of quote!

I did not attempt to find out what Lily grower wrote this but if he were my neighbor and his moles left in a hurry for my garden and I am assuming he meant that the mole ran away to a yard where they had no snakes running around in the mole runs as in my garden then may be I, too, would wish my neighbor would also have a homing instinct and 'do as the turtles do'!

One could have an elephant that could tread on the mole and in this way kill the mole 'dead in his tracks' Or you can pump Cynogas into the runs or train your dog to dig up every mole he thot he could see moving in your lawn of flower bed but in

every case you will always have moles and I wonder if the above snake suggestion does not solve the problem—I am going to make inquiries, quietly, of my neighbors!

But joking all aside, I have tried many ways of getting the moles in the lawn and garden; out in the fields, I leave them alone for they no doubt do good there. The one method I have settled on it the harpoon trap (it is listed in the Catalog); if it is properly set in a main run, you will catch every mole in your garden within 36 hours after they start work. After a catch, it usually is best to reset in the same place for the mole's 'old women', like we humans, will be right on his trail to see why he did not come home last night with the bacon. Usually two moles will make your lawn look like a miniature battlefield in the course of a few weeks, if left alone, and the trapping of a couple of moles will about solve your problem unless your neighbor comes home with some more snakes or the spring mole-family gets to the stage where the children begin looking for mates when he no doubt will surely make a visit to your yard to see why your moles are not sociable and have made no recent calls.

It is important that traps are set at the edges of your garden if you wish to make a catch without too much lawn dug up.

NON-FLOWERING WISTERIA

To make a *Wisteria* smother itself in flowers, its natural tendency to cover large areas must be curtailed. Early summer is the proper time of the year to do it.

The long annual shoots, which sometimes grow 4-5 feet in a matter of weeks, do not bear flowers, the blooms being confined to the base of such shoots.

These vigorous new growths should therefore, be cut back to about a foot in length and then cut back again to within two inches of the older wood in winter. This double pruning will do more than anything else to induce the development of those long sprays so much admired.

After the summer pruning, sprinkle superphosphate on the soil around the plant, using two ounces to a small vine, quarter of a pound for an old one. Hoe it lightly into the soil and water well; this will encourage the formation of flowers.

It may sometimes even be necessary to do some root pruning.

THE WORD "WORT"

This word is used in many names and it means plant or herb. Its used is limited to compound words such as St. John's-wort, etc. It is an old expression.

FRANKLINIA NOT GORDONIA!

Todd Gresham of California, who has taken considerable interest in this beautiful native tree writes and asks, "Incidentally, why not catalog *Franklinia*, not *Gordonia*. It's distinctly American, not British, and I think it should bear the old name."

He has something there and it may be a good idea to make the change in spite of the botanists, who are now bringing up names that have long been forgotten.

THE AKEE

(Cont. from Page 85)

alytical chemist to the Government of Jamaica, is quoted as reporting: "If the fruit be ripe and fresh, which can be known by its being open, the edible portion firm, and the red part bright in color, it may be considered a good safe food. But if the fruit be not ripe, or if there are any signs of decay, such as mouldiness or softening of the edible portion, or a dingy color in the ordinary red part, the fruit should not be eaten."

If you want a lovely tree in your garden, which will give you many a good meal besides, remember the old adage: "A one-dollar plant in a ten-dollar hole." (Or should it not be a ten-dollar plant in a one-dollar hole?) Give the plant a good start, and it will reward you well.—L.H.W.

Rosella

The distinctive flavor of Rosella is sharp and refreshing. It makes delicious jelly and can also be used for flavoring puddings and sauces.

It prefers a sub-tropical climate, growing very well in Southern Rhodesia, in Natal and in most of South Africa so that there is no reason why it should not do equally well in parts of America where summers are long and warm.

Rosella belongs to the same family as Hibiscus, Mallows and the vegetable called Okra.

They all have similar flowers and the leaves and seed pods of both Okra and Roselle are almost identical in shape. The Rosella bush, however, grows much taller and is very colourful. It has maroon stems, and the calyx that covers the pods, instead of being green, is brilliant crimson.

Rosella is a hardy annual and will grow from seed in most fertile soils that are not water-logged.

The seed is dark brown and hard, about the size of a tomato seed and quick to germinate. It should be sown thinly in drills as soon as frosts are over and transplanted 3 feet each way when the seedlings are 4 inches high.

Well grown plants reach about 7 or 8 feet in height.

As the season advances, numerous buds begin to form in the axils of the main stem and along the lateral branches. Then a pale yellow flower opens out and its calyx begins to develop. This is the edible part of the plant.

The calyx becomes fleshy and turns a beautiful crimson, the flowers start to wilt and the seed pods swell.

The time to pick the pods is just after the flowers have fallen and while the whole pod snaps off the stalk cleanly without any fibres.

Young pods contain a lot of pectin, which is the ingredient that makes Rosella jelly set so well. If the pods are over-ripe, they become full of fibre and the amount of pectin is so reduced that the setting properties are lost. Rosella then becomes unsuitable for anything but drying.

To make Rosella jelly, strip off the red calyx and discard all seed pods. 3 lbs red calyx to 5 pints of cold water; boil for half hour and strain. Put back on the fire and boil for 20 minutes, then add 1 lb. sugar to every pint of juice. Boil for another 10 minutes or till it sets. Test on a cold saucer.

For drying Rosella, strip off the red calyx and dry it in the sun or warm oven till all moisture has evaporated. Store in an airtight container; dried Rosella keeps indefinitely.

For flavoring gelatine moulds, corn-flour puddings or sauces, boil 1 tablespoonful of dried calyx to 1 pint of water till the juice is well coloured. Strain; add sugar to taste, oil up again and use the syrup as required.

(Note: Rosella is listed under Hibiscus Sabdariffa).

By Mrs L. Thurnburn, South Rhodesia.

TRILLIUMS SLOW TO GERMINATE

It not only is slow to germinate but not too easy either. Sowing the seed in sphagnum moss and placing in a dark place may solve the trouble.

CLEISTOGAMY AND VIOLAS

The habit known as cleistogamy is present in Violets where the flower is fertilized by bees very early in the spring and to overcome any shortage of bees during this cold part of the year, the flower can self-fertilize itself later on.

Thus look for a second crop down in the leaves. These buds are formed in late summer.



Chamaerops humilis—the only native European Palm (left foreground) at the Fairchild Tropical Gardens.

Planting Trees

It is seldom that we hear of people planting a tree to celebrate some event. This should be done more.

A recent bulletin from the Michigan State College mentions some historical trees planted on the campus here at East Lansing.

One stately White Pine was planted by President Abbot when his daughter Mary was born; she was married beneath it twenty years later. There are several *Cercis canadensis*, or Red Bud trees on the Campus and one perfect specimen is known as the Liberty Hyde Bailey tree, named after Dr. Bailey in 1882.

Another famous tree is known as the "Old Beech" tree. It stands out alone with its branches touching the ground, a beautiful Beech.

A beautiful specimen of our Rock Elm was planted by the Class of 1991, under which the Class buried a steel box containing Class mentoes. It now is a large specimen.

In recent years a few other trees have been planted by various groups. One of the oldest trees on the Campus is the "ging-

ko tree, planted by Dr. Thurber, the second professor of horticulture, between 1860 and 1863. There are other trees that could be mentioned, for instance, the tree that Teddy Roosevelt planted when at the College in 1905.

There are some 2,200 varieties and species of woody shrubs and trees on the Campus of 628 acres, among which are Magnolias, with their fragrant, large, white, pink and purple flowers; flowering Crabs; Hawthorns and the double-flowering Chinese Cherry trees.

WHAT TOBACCO?

In pioneer days mention is made of "tobacco" being grown in the Snake River country. It is a "tolerably good substitute for the cultivated species, for the purpose of smoking but it is unfit to chew. The plant closely resembles garden sage and forms into heads similar to domestic flax."

NEW ZEALAND READERS

Any remittances you wish to make to me can be mailed to me at Boronia, Victoria; personal checks will be accepted. This arrangement will meet your currency regulations; figure your shilling at 14 cents.

SAIER'S GARDEN MAGAZINE

DIMONDALE, MICHIGAN.

VOL. 4, NO. 1. (13) JULY, 1955.

Owner and publisher of SAIER'S GARDEN MAGAZINE, Harry E. Saier, Dimondale, Michigan.

SEEDS WANTED

During the months requests come in for seed of plants, etc., that at the time we have no known source. The following are some of recent date. Any reader who can help out on any of them would be doing a good service by writing us.

Plectranthus species.

Sinningias, especially *S. Helleri*, *barbata*, *conspicua* and *speciosa albiflora*.

Any genera of the Gesneriaceae family are wanted; usually when seeds are secured they come in in such small amounts that but one or two packets can be made up.

Leucocoryne ixioides odorata. This is wanted by an English reader and as this is a Chilean native we would like to locate a source there, a country of which we have too few collectors. Possibly some reader has contact with a flower grower there.

Russian White Chives, *Knjaschna Sjeujera*.

Russian Red Pear, *Moldavische Rote*.

The spelling may not be correct but they would be of interest.

Blue colors of *Linaria*.

Nycterinia species.

Zaluzianskya capensis.

Codonanthe or *Corallo-discus*. Both are not listed in *Hortus*, but I presume they are *Gesnerias*.

Plectopoma species.

Gynura aurantiaca or Velvet-Plant. This is a Java native but may be growing in Australia.

Branching White *Liateris*.

Monarda punctata.

WHY IS THIS OF INTEREST HERE?

We get many letters annually about how one cannot afford to grow flowers; how little room one has available for flowers and just recently, from California, a very interested grower wrote that due to higher living costs he had to come out of his retirement and seek work as he finds that his savings for his old age are not sufficient to keep him.

We note all this in the interest taken in ornamental gardening in the past and that taken in recent years. In England, this is especially so, where, once large estates maintained fine gardens, now taxes have taken these gardens away from their owners, just as they will do here, in the near future!

Even farming has to be carried on on a larger scale than in the past and now there is no place for the 40 and 80 acre farms. Large houses and barns were built and paid for on 40 and 80 acre farms, 50 years ago! but today owners cannot even afford to paint these buildings as is easily noted on a drive thru our countryside!

SEEDS FROM AUSTRALIA

Many of our readers who send us seeds from Australia and New Zealand are getting your inspection certificate, which is not necessary. This certificate applies only to growing stock such as plants, bulbs, etc. For seeds and especially native flower seeds all that is required is that each packet have the genus and species on it and a statement, "no value", even this is not necessary as a rule.

The mailing envelope should be marked "native flower seeds, no value".

IN JAPANESE

Morning-glory is *Asa-gao* in Japanese, literally means morning face, while *Yuh-gao*, Moonflower, means evening face. Joe Elias.

ORIENTAL BULBS AND TUBERS

The following oriental bulbs are delivered between December and February. It will be necessary to place orders before September at the prices quoted; later orders accepted ONLY at a 50% increase in price and subject to stocks being unsold.

ONE at 1/5 10 price; no order less \$2.00.
5 at 10 price; 25 at 100 and 250 at 1,000.

AGAPANTHUS BLUE. The (Blue African Lily) Bulbs 5-7 in. cir. PRICE: 10- \$5.00; 100, \$40.00.

ACHIMENES. Finest mixed in blue, purple, violet, red, white, mauve, scarlet, crimson, pink, rose, etc. Top size bulbs. PRICE: 10, \$1.00; 100, \$10.00; 1,000, \$50.

ACHIMENES. Deep violet-purple; top size. 10 bulbs, \$1.00; 100, \$9.00; 1,000 \$50.00.

ACHIMENES. Deep cardinal-red; top size. 10, \$1.00; 100, \$9.00; 1,000, \$60.00.

AMARYLLIS hippeastrum. Finest mix colors; 8-10 inch cir. 10 bulbs \$1.00; 100, \$40.00, 1,000, \$230.00.

AMARYLLIS belladonna. 5-7 inch in cir. 10 bulbs, \$4.75; 100, \$45.00.

AMARYLLIS equistris. *hippeastrum puniceum*; 5-7 inch. 10 bulbs, \$3.60; 100, \$32.00; 1,000, \$30.00.

AMARYLLIS DOUBLE FLOWERING: Rare this is the first time this has been offered; 5-7 inch bulbs. 1 bulb, \$1.00; 10, \$7.00; 100 \$50.00.

BEGONIA REX. Finest mixed; large tubers. 10, \$1.80; 100, \$7.00; 1,000, \$60.00.

ARISAEMA. (Snake Lily) 5-7 inch in cir. tubers. 10, \$6.00; 100, \$40.00; 1,000, \$180.

CURCUMA Zedoaria. Indian Ginger Lily. Top size bulbs. 10, \$3.40; 100, \$22.00.

CRINUM amoenum. Indian species. 10 bulbs \$5.00; 100, \$44.00; 1,000, \$190.00.

EUCHARIS. Amazon Lily. 5-7 inch. 10, \$3.50; 100, \$30.00; 1,000, \$145.00.

GLORIOSA superba. (Glory Lily); 4-7 in. tubers with sound eyes at both ends. 10 tubers \$2.00; 100, \$18.00; 1,000, \$90.00.

GLORIOSA Rothschildiana. 4-7 inch tubers with sound eyes at both ends. 10 bulbs \$3.00; 100, \$15.00; 1,000, \$140.00.

HAEMANTHUS brayeri. (Football Lily or Blood Flower). 6-8 inch bulbs. 10 bulbs \$6.00; 100, \$50.00.

HEDYCHUM. (Butterfly Lily) Includes highly scented varieties; top size tubers. 10 tubers, \$4.00; 100, \$40.00; 1,000, \$160.

AMARYLLIS hippeastrum. Separate colors in orange, red, rose, salmon, scarlet and white; order color wanted; 8-10 inch bulbs. 10 tubers, \$3.90; 100, \$35.00; 1,000, \$160.00.

IRIS tectorum. Top size tubers. 10, \$3.00; 100, \$24.00; 1,000, \$150.00.

NERINE. Top size bulbs. 10, \$3.00; 100, \$25.00; 1,000, \$140.00.

TUBEROSE, DOUBLE. 3-5 in. bulbs. 10 10, 65¢; 100, \$5.00; 1,000, \$30.00.

ZEPHYRANTHUS robusta. Top size bulbs. 10, 65¢; 100, \$3.00; 1,000, \$30.00.

ZEPHYRANTHUS rosea. Top size bulbs. 10, 75¢; 100, \$4.00; 1,000, \$38.00.

ZEPHYRANTHUS candida. Top size. 10, 75¢; 100, \$4.00; 1,000, \$29.00.

ZEPHYRANTHUS sulphurea. Top size. 10, 50¢; 100, \$4.00; 1,000, \$39.00.

THOMSONIA nepalensis. 10-12 inch bulbs. 10-12 in. bulbs. 10, \$6.00; 100, 50.00.

MONTBRETIA. Mixed Colors. Top size. 10, \$1.00; 100, \$6.00; 1,000, \$50.00.

5 at 10 price; 25 at 100 and 250 at 1,000.
ONE at 1/5 10 price; no order less \$2.00.

The Rhodesian Sausage Tree

The Rhodesian Sausage Tree gets its name from its enormous pods, anything up to 2 feet in length and 12 inches in circumference, that hang in great numbers from long string-like stalks on the tree in summer and resemble a well stocked sausage shop.

The botanical name of the tree is *Kigelia pinnata*. It grows on river banks and in moist valleys at an altitude not exceeding 4,000 feet. The tree grows to a fine height of about 70 feet and in winter stands out well against the dry Rhodesian bush with its black bark and evergreen foliage.

The leaves are composed of seven small leaflets, and the flowers that open in the winter (June) are very beautiful. They are a rich purplish crimson, about 4 inches across and very sweetly scented and hang in loose panicles on long stems, one flower opening at a time.

The pods are greyish brown and so hard, that it takes an axe to cut them in half. Inside the pod there is a dry spongy pulp, in which a few seeds similar to orange pips are embedded. The pods can weigh up to 10 pounds, so it is not advisable to stand under the tree on a windy day.

The only animal that seems to enjoy these pods is the hippopotamus. He chews the pods into a pulp, then sucks it and spits out the fibres.

By Mrs. L. Thurnburn, S. Rhodesia.

Note: Some of these trees are grown in Florida and I presume in Southern Texas and California; I add Texas because they too have a frost-free section and very often some Texas reader gets tired of the mention

that something or other can be grown in Florida and Southern California, and thus writes me a letter bawling me out.

It is very nice of Mrs. Thurnburn to send in this article; I would like to have pictures when possible of native flowers as well as of the gardener.

LECTURER

Flower groups in the Cleveland, Ohio area, who may be interested in talks on floral arranging and other subjects pertaining to flowers should get in touch with Angela Danko, 6725 Orchard Blvd., Cleveland, 30.

She is active in this work.

KNEE SAVERS

JUDSEN
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FOR EVERY
"DOWN-ON-THE-KNEES"
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No matter what the "down-on-the-knees" job is, Judson Knee Pads let you do it faster, easier and with comfort. They've been standard knee protection for over 30 years.

PRICE per PAIR — \$2.50, postpaid.

RECOMMENDED



GARDEN BOOKS



CAMPANULAS. \$5.00

H. C. Crook. 255 pgs; 99 excellent half-tones of species; covers the genus very well as to history and descriptions. Anyone interested especially in Campanulas should have this book. It would make an excellent gift book.

DAHLIAS FOR ALL. \$1.00

Practical advice for the beginner on how to grow Dahlias by the organic surface method, with first steps to exhibiting. Crown 8vo. With 5 illustrations from photographs, 1 of them in color.

FLOWERING & ORNAMENTAL SHRUBS

Their cultivation and propagation. Advice on what to grow under different conditions and instructions on preparation of the soil, pruning, propagation, pests and diseases. Demy 8vo. With 5 illustrations from photographs, one of them in color; D. Macer Wright; London; 1953. \$2.50

DAHLIA CULTIVATION. \$1.80

An attractive book which will captivate and encourage all Dahlia-lovers and fill up a long-felt want. Demy 8vo. With 41 illustrations from photographs, 4 of them in color, and 2 diagrams.

CHRYSANTHEMUMS. \$2.50

For amateur and Market Grower. A complete guide for all Chrysanthemum growers. Demy 8VO. With 61 illus., 4 in color and several diagrams.

CHRYSANTHEMUMS FOR ALL. \$1.00

How to grow Chrysanthemums for exhibition and decoration; it is mainly for the beginner and the reasons for the various operations are carefully explained. Allerton. Crown 8vo. with 5 illus. from photo; 1 in color and 13 diagrams; London; 1953.

TWENTY YEARS OF SEED RESEARCH.

At Boyce Thompson Institute of Plant Research. Lela V. Barton and William Crocker; Demy 8VO; 21 illus from photo; 10 diagrams; frontpiece in color. \$3.00

HOW TO GROW FUCHSIAS. \$1.50

78 pages, heavy paper cover; by Francis Howard; 7 color plates; many pen drawings; deals mainly on varieties and cultural practices.

GROW THEM INDOORS. \$2.75

Practical instructions for planting familiar indoor plants, including African Violets. Many illus. By Allen H. Wood.

HOUSE PLANTS UNUSUAL: THEIR CARE AND CULTURE. \$3.00

A companion volume to "Grow Them Indoors," and the practical manual on such plants as Amaryllis, Arum, Iris, Herbs, etc. By Allen H. Wood, Jr.

PRICES QUOTED ARE POSTPAID.

SEED and POTTING COMPOSTS. \$1.75

By Lawrence and Newell. Rev. 4th edition, 160 pp., 30 figs., 122mo., cloth. London, 1950. New in dust wrappers.

The authors are the developers of the standardized John Innes composts. Their book shows how those remarkable composts save time, reduce the hazards of raising difficult plants from seed and simplify proper potting on the seedlings or cuttings to maturity. Complete formulas and methods of preparation are given.

HERBAL DELIGHTS. \$2.75

Tisanes, syrups, confections, robs, vinegars and conserves. Mrs. C. F. Leyel; London; 1953. Demy 8vo. With 50 line drawings by Marion Rivers-Moore.

AUSTRALIAN WILD FLOWERS 75¢

National Handbook 9; 32 pp. 23 illus. (16 in full color). Melbourne, 1944. Gives notes on garden cultivation and identification lists of 106 wild flowers.

THE PROPAGATION OF PLANTS \$3.50

By E. J. King. 8vo., illus. How to propagate every familiar garden plant and also many that are rare and unusual. The directions given should enable the amateur to be successful even with species supposed to be difficult. Professional propagators and nurserymen will also find the working direction they require. Paragraphs in the text are numbered to make cross references easy and there is also a full index. 3rd. edition.

A. B. C. OF THE GREENHOUSE. \$1.80

Shewell-Cooper, 320 pp., 4 col. plates 9 gravure plates; 27 line illus; 12 mo; cloth London, 1949.

THE DAFFODIL. \$3.75

Its History, Varieties and Cultivation. The cultivation of all the important species and many hybrids with details of commercial productions, exhibiting and decoration. M. J. Jefferson-Brown. Demy 8vo. with 37 illustrations from photographs, 4 of them in color, 20 diagrams. London. 1953

THE PROPAGATION OF ALPINES. \$3.75

An exhaustive book for the student, amateur, nurseryman and expert, admirably indexed. Lawrence D. Hills. Demy 8vo, with 87 line drawings and 44 illustrations from photographs, one of them in color.

THE I. IS. \$3.00

This comprehensive study covers planting, cultivation and aftercare, diseases, selection of varieties and an authoritative table of all known species. Leslie Cave; Demy 8vo. with 4 colored plates and 35 photographic illustrations.

FRITILLARIES. \$4.25

Miss Beck treats the whole genus giving descriptions and details of cultivation. Christabel Beck. Royal 8VO. with 45 illus. from photographs, 4 of them in color: London, 1953.

THE HERB GARDEN. \$1.75

Mary T. Quelch. 232 pgs; 8 ills; treats the subject of Herbs mainly as to their use in various illnesses; viz., colds, asthma, constipation, indigestion; rheumatism, etc; gives methods in making teas, tonics, etc.

THE PRUNING MANUAL. \$5.00

E. P. Christopher. 320 pgs; covers the subject of Pruning very completely; trees, fruits, shrubs; methods; pruning tools; 12 ills. Every gardener should have a copy.

A.B.C. of ROCK GARDEN and POOL \$1.50

Shewell-Cooper. 204 pp. illus. London 1949. Quite comprehensive for its size, this book lists many plants usable for rock gardens and for pools. Gives cultural hints and tells you how to construct rock gardens and pools.

GENTIANAS IN THE GARDEN \$3.00

149 pgs; by G. H. Berry. This is really a good practical book on Gentians. It is written by a practical grower and one who has a good investigative mind. There are several full page illustrations and one of G. fararna in color; a really good book.

Anyone who is growing alpine plants commercially should by all means have a copy of this book. It gives information on propagation that cannot be found in any other book; the author is practical.

PLANT BREEDING FOR EVERYONE \$2.75

At last a simplified book that tells the amateur gardener how to grow his own varieties of fruits and flowers. Ills. with drawings and photos. Written in popular language (avoiding technicalities) and designed to aid the gardener in raising new plants for fun and profit.

HERBS: HOW TO GROW THEM and HOW TO USE THEM. \$3.00

Listed as America's leading reference on Herbs and their many uses. In "100 Best Garden Books." 5th revised edition; by Helen Noyes Webster.



GENTIANAS. \$3.50

Here is a valuable book by David Wilkie of the Edinburgh Botanic Gardens, where he has had unique facilities for studying the genus. 255 pgs of which some 70 pgs are on descriptions and cultural information. There are 95 ills. mostly full page. I recommend it highly.

THE SCENTED GARDEN. \$3.75

Another Rohde classic. Revised edition of a standard volume for making aromatic gardens. Full of the lore and uses of scented plants. Eleanor Sinclair Rohde.

MRS. FOOTE'S ROSE BOOK. \$3.00

Essentials of growing beautiful roses, written by a pioneer rose gardener. Rose lists, instructions; illustrations. By Harriett Risley Foote.

THE ROMANCE OF THE ROSE. \$1.75

A perfect gift for gardeners. Brief lyrical record of the Rose in history. Beautiful edition. By Josephine Carven Chandler

GARDENING WITH COMPOSTS. \$1.00

F. C. King. 114 pgs.; Principles of good gardening; Soils; Manures; Preparation of Composts Weeds; Earthworms; etc. much interest information on Composts.

PROPAGATION of HARDY TREES and SHRUBS. \$1.75

G. M. Taylor. 107 pp. 8 pp plates, Oxford, 1947.

A book designed to meet the needs of the amateur. Tells how to make cuttings, layers, grafting, etc. What shrubs and trees can be propagated from seed and how best to treat the seed in order to obtain the best results



BOOKS—CONTINUED FROM PAGE 389

PRACTICAL PLANT BREEDING. \$2.00

By W. J. C. Lawrence; 1951; 160 pgs; 24 ills and drawings. If you are interested in plant breeding or improving flowering plants grown in your garden, this book will help greatly. It contains the information necessary to save you many years of unnecessary work and will pave the way for quick results.

HOW TO GROW AFRICAN VIOLETS. \$1.40

By Carolyn K. Rector. 93 pgs; ills; stiff paper cover. It covers the culture in detail and probably is the best on the subject. For the small price anyone growing this beautiful house plant will derive much pleasure from it. It would make a nice gift for a house wife.

SECRETS OF SUCCESSFUL PROPAGATION. \$2.00

By A. A. Longmire. Contains many line drawings by the author with detailed descriptions of his methods of propagating. The list of subjects range from hardy trees to tropical plants; every propagator should have this book.

ALPINE HOUSE CULTURE. \$2.40

By G. Anley. 164 pgs; 48 ills. This book consists of two parts: the alpine house, its management and care, in detail; and the culture in detail of hundreds of alpines suitable for alpine house growing; its good.

ROCK GARDENING AND ALPINE PLANTS. \$6.00

By Henry Corveon. 524 pgs. There is a vast amount of information in this book written by the late M. Coorevon, one of the outstanding alpine growers in Switzerland. One valuable section is the list of hundreds of the best alpines with detailed information on each, the most complete list available anywhere. Its of value to both the amateur and professional gardener and nurseryman. A really fine book. Incidentally, I might mention that seeds from the Corveon gardens are offered in the Seed Catalog.

CHRYSANTHEMUMS. \$2.50

By John Woolman. 109 pgs; nearly 60 ills and line drawings. Covers the subject for garden growing and exhibition; propagation, watering, etc. Deals with all types.

SIMPLE PROPAGATION. \$1.10

By Noel Prockter. 140 pgs; very many ills. There is a vast amount of practical information in this book on propagation, from seeds to budding and grafting, with a list of trees, shrubs and other plants with methods of propagation. Worth many times the price to any grower.

ALPINE GARDENING. \$3.85

By L. D. Hills. 343 pgs; 34 ills, with many line drawings; good on alpines; goes into detail on alpine banks; borders; dry walls; paths and alpine lawns; rockeries; soils; alpine plant by plant; propagation.

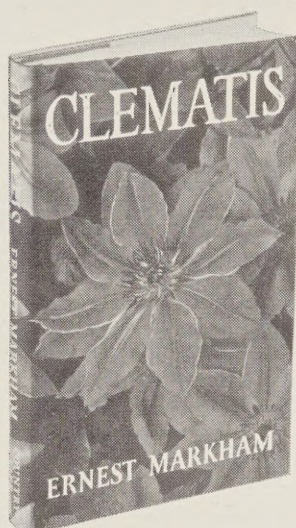
SIMPLE GREENHOUSE MANAGEMENT. \$1.00

By J. S. Dakers. 122 pgs; object of the book is to help the amateur in elementary principles of cultivation under glass; there is a good deal of information on popular plants; anyone with a small greenhouse should have this book.

TURF.

By I. Lewis. 136 pgs. Discusses in a practical way grasses suitable for tennis courts, bowling greens, playgrounds and lawns; their making and keeping. Written under English conditions but adaptable elsewhere. 1948.

\$2.00



CLEMATIS.

Any one growing Clematis should have this book. 126 pgs; 26 full page ills. It is a practical book covering the subject fully, especially as to culture and uses. 40 pgs given to descriptions of the species which is covered fully. Contains a lot of valuable information. By Ernest Markham; 1951.

\$2.50

SAIER'S EARLY SHASTA

Mrs. Paul W. Brown of Dayton, Ohio, growers of perennials, writes: Three years ago I bought your Early Shasta Daisy seed; it is a very good Daisy and starts blooming here at Easter and continues fairly all summer long. It certainly is an attention getter.

She also asks why Iris fails to bloom when divisions are made. There could be several reasons, one if from old crowded roots; or poor planting with poor climatic conditions or even borers. In our own planting of Iris, of which we have some 400 kinds covering a few acres, we seldom bother with plants that are over 3 years old and would rather plow them under.

She also asks if any reader has had Iris Theodolinda "consistently having 2 falls and 2 standards and an occasional flower with 4 falls and standards". Possibly some reader can advise on this.

While we are mentioning Mrs. Brown's letter, I might repeat her remarks about the Magazine. We actually do get many letters like this but hesitate to take up space for fear it will appear as if we expected our readers to foot the bill while we were 'blowing our own horn'. She says, I like the magazine better (and this covers a lot of ground) than any other publication I get. Being a licensed nursery, I do subscribe to many magazines, but yours is more down to earth and homey.

Well, the Magazine is quite a lot of extra work and we have no time nor desire to set type of a lot of flowery words, better to talk plainly and in a practical way about flowers. It is a fact that a 'good' writer can use up a page just catching his breath after picking up his pen. If your work is a linotype operator and you are knocking down your \$3.00 to \$5.00, and may be \$6.00, per hour, it makes little difference if there is any value in the stuff you are setting or not but when you have orders to fill, weeds to hoe out, seedlings to transplant and a hundred other things to do, you simply want waste time by a hot linotype setting junk.

The magazine is not published at a profit; and it has been my hope that it would be an outlet for practical information, a sort of 'shop news' so to speak.

WANTS CATALOG SIZE CHANGED!

We just had about completed the resetting of the Catalog when our friend Terrell Nichols of Bowie, Texas writes, "I certainly would like to see you print your seed catalog the same size as SAIER'S GARDEN MAGAZINE—8½ x 11 inches."

There are some good reasons for both sizes. The main ones against the large size is the greater mailing cost; you either work your head off getting out as neat and clean a catalog as possible then wrap it like so much junk to get by the high envelope costs or you buy the large expensive envelopes; I see little reason for printing colored covers on thick, costly glossy paper and then hire some strong-armed girl to fold and crease them up the size of a lead pencil, as is the case with all foreign papers, especially.

Another bad fault with the larger size is not being able to use it on one's table or desk as one would a book. The Catalog really is more than a catalog; it contains down-to-earth practical information and one has reason to refer to it all thru the year; a large thin magazine-type catalog would have to be laid down on a table. Again, the two column catalog allows space at each listing for notes or checking; the middle column is always confusing.

Besides these, there many advantages in the smaller size from a cost point of view in printing. It is our intention to issue the Magazine in the small size after this issue; in fact if it were not for the fact that the cover stock was not already printed, this issue would have been in the smaller size; even the postal rate is cheaper on the small size, from 14 cents to 10 cents!

JAPANESE METHOD OF PLANTING MORNING GLORY SEED

1. Sow when the climate is warm enough and there is no frost.
2. Put rough sand in a pot or box, ¾ inches deep and spray water on it.

Then make holes about 5/8 inches deep in which are to be placed seed and water again until holes are filled with sand.

4. Immediately expose to the sun and when the sand is dried up to a white color, spray water upon it again.

Transplant seedlings into 4 or 5 inch pots in the evening before the tiny leaves open. Put the pots in the shade only one day and then place in the sun from then on.

As reported by Joe Elias.

JASIONE HUMILIS.

F. E. Blunck of Finleyville, Pa writes: Regarding the culture of Jasion humilis, I like to sow some seed in very early spring, but this time of the season (June), I proceed as follows. I put a few drops of water in the envelope and put it in the deep-freeze for 2 weeks; take it out, thaw, then put it back in the envelope with a few more drops of water and leave for a few days when I take it out, thaw, and sow in a mixture of good garden loam, sand and screened leaf-mold or humus.

I find that this procedure applies to all small seeds that should be in the soil early in the spring.

By the way, Mr. Blunck is 87 years old!! and still very active. He is assisted by his son in their landscape business and nursery; one simply does not have time to grow old when he is interested in growing things! that is the reward in the business.

ACONITUM

The Aconites love a rich soil where a peaty soil and rich leaf mould are very beneficial. This would indicate more of an acid condition. The seed is slow to germinate but not difficult. A dark place for the seed pans is also required for best results.

STREPTOCARPUS

These beautiful plants should be grown by people who like bloom all the year around, yet have little time to devote to their care. The plants are gay with their strap-like foliage and flower of many colors, held well above the foliage, on long slender stems.

When buying seeds by a mixture, will contain reds, purples, pinks, orchid and many with a maroon strip coming from the throat out to the petal. Others may have yellow stripes. The blooms will last about 3 weeks if not too many on one stem. The flowers are large and when over two, the stems will have difficulty in holding them up. Cut them for table decoration when they will last for at least two weeks.

The seeds are very small and should be started the same as with Gloxinias.

I have found that they respond well to my way of starting all Gesneriads by using a covered plastic box. I put a little of my potting soil in the bottom, covering it with coarse vermiculite and using a nutrient to wet it down; let stand for 1 or 2 hours, then drain well and sprinkle the seeds and cover the box. Keep in a warm place and put under your lights. I have raised mine under the CX-General Electric lamps; this was first mentioned by Plantsmith in articles; within a short time little green specks will appear, remove the cover and set under fluorescent lights, if you have them or bright daylight, never let them dry out.

Here is where many people have trouble for they find one leaf and will wait for

another before transplanting. They should be transplanted as soon as this one leaf is large enough to handle. Just like your Gloxinias, the one leaf will keep growing and it may be several weeks before the second leaf appears. Then after waiting awhile the others begin to grow. When you have about five leaves you can look into the heart of the plant for little green balls. These are your buds; they will be held tight in the heart of the plant until you could scream, almost over night they will shoot up and the little balls will begin to open and turn into long shaped buds, may be one or up to five; a few days they will show color. The flower develops slowly and I have never been able to hasten it.

Streptocarpus are heavy feeders with fibrous roots making it necessary for them to have a loose rich soil; feed often and repot promptly.

For me, the little one-leaf plants go into 2-inch pots when the second leaf appears; they should be ready for their 3-inch pots; the ones I have now a year old are in 7-inch pots. This may not be necessary but I want to keep them blooming. My reward has been almost constant bloom.

The soil mixture I am using for all my plants has a peat moss base instead of soil because I am lazy or living in a northern state, it is impossible to get good soil in the winter months if I run short.

By M. C. Cogswell, N. Y.

Using Fluorescent Lights

Regarding the results I have had with fluorescent lights in my plant room, have been far from satisfied with them.

The lights were installed by an electrical engineer according to light meters so that according to engineering standards they were correctly installed.

The racks were two tier high with two frames of lights and reflectors over each bench; these can be raised and lowered as required. The reflectors were made of a heavy aluminum foil and curved down at the sides to prevent escape of light.

The Gloxinias were only fair; the stocks inclined to grow tall and reach into the lights and the stems were not sturdy.

The following plants were tried with these results:

Streptocarpus—grew one leaf; one is still under lights after one year and put in a window, have been in bloom for seven months and have 10 leaves.

Chirita—Died.

Gloxinia perennis—grew only four leaves until removed to the window sill where they bloomed.

Smithianthus—grew many from seeds and kept 20 under the lights and 20 in the window where they received all the afternoon sun. Those under lights are standing still while those in the window are all in bloom.

Epescias—The ones under the lights have grown very slowly; those in day light are in bloom.

Hoya—under lights, had two leaves but on removing to day-light two months ago is now 30" tall.

Gloxinia cardinalis—in pots under lights they are about 5" tall with no buds; those in flats out in the lath house are all in bloom.

These are the plants I have tried in the years I have been using lights and data kept on them. This summer we had a lath-house built and the results were so startling compared to the lights that we are having a green-house built.

The plants in the lath-house are all about 3-4 inches tall and in bloom or bud while those under lights are taller, with no buds, both from the same seed and planted at the

same time.

I have been using a CX light made by the General Electric Co. and find they start my seeds much faster but make the small plants grow too fast. Strange as it may seem the Epescias like this light. I have had both plants and cuttings by mail and badly broken and by using lights have found every piece has rooted and the color seems much improved. A Chocolate Soldier has its pink markings much brighter. It may be, of course, that the green is deeper and that shows up the faint pink spots.

The seedlings I remove as soon as they start to grow tall and put them under the other lights. The Company warned me about leaf blemish but having not found any of that in nearly 2,000 seedlings.

In checking around the different research stations I find they are not too sold on growing plants under lights, except for cuttings in Warden cases, but they all point out to me the mistakes I had made, viz., using day-light bulbs only and I should have been using white and day-light tubes or white and blue tubes. Also my temperatures were a way off; should be between 60-68 degrees F. with good ventilation.

By M. C. COGSWELL, N.Y.

PRONUNCIATION OF PLANT NAMES

Those who have any reason to work on plant names, often wonder if the mix-up in them will ever be straightened out. Books on botanical subjects become obsolete as soon as they are published, so far as the names are concerned and a book published in Europe will have different botanical names than books published in the U. S. A.

In the seed listings, both in the Magazine and Seed Catalog, we intend following Hortus II with its latest corrections which Mr. Lawrence, kindly sends us from time to time; any changes that are made in Hortus can be reasonably expected to be final.

As to pronunciation, this is more of a problem, than the correct name, and in 4 or 5 books on pronunciation, each one is different, in fact one writer goes so far as to say that anyway you say it is correct! We

do not take this lazy point of view. And again, one English writer made a rather sarcastic remark on our method, saying that one requiring this method hardly needs to know how to pronounce the name! On the other hand, why go to all the effort to have 'a' as in 'all' and 'a' as in 'awful', etc., when our method is so much more simple as to the point—how to speak the word quickly. By the way, it is not our point that no mistakes are made and when a reader notes one, why not say so? It's always appreciated.

This problem is not a new or resent one; hundreds of years ago it was the same. Take the name "Cyclamen". Here in the U.S.A. it is always spoken of as SYKE-clay-men but in all the books on pronunciation it is down as, SIK-lam-en; this is also a little difficult to say.

An old poem on this may be of interest; it goes as follows:

Some people use it now and then,

As if 'twere written "Sickly-men",

But as it comes from "kuklos", Greek,

Why not "kick-laymen", so to speak?

The gardener, with his ready wit,

Upon another mode has hit;

He's terse and brief—long names dislikes,

And so he renders it as "Sykes".

Growing Delphiniums

I have the best Delphinium seedlings in this locality and I would like to tell you how it was done.

After I had mailed my order for the seed I got my seed flats ready (coffee cans) and as soon as the seed came they were promptly planted and then set in an open frame, protected only from rodent harm. This was in February and March when the temperature was below freezing. The first seedlings to appear were *D. cardinalis*, followed by all of the others. I believe every single seed has produced a plant.

I had hoped that with good luck, I might get enough plants to make a clump of 10-12 plants out of the four packets but from the *cardinalis* packet I have 90 plants after thinning and nearly as many from the other packets; they are now growing like weeds.

By Manuel Calvo, Maryland

NOTE: Mr. Calvo usually has good success with the plants he grows and his method or spring sowing is ideal. Delphinium seed should always be sown promptly upon arrival and if not the seed should be stored in the refrigerator until sown. Mr. Guldemon, who writes in this issue on perennials, plants Delphinium by the pounds and his method is to sow in flats which are set on top of each other, each flat set cross-ways for ventilation and placed in a shed, where they do not get the direct sun; of course when germination starts they are immediately removed so that air circulation in the flat room will prevent rot and damping-off; air that stands still, especially when damp and warm, will bring on much trouble. Mr. Calvo's open-frame supplied an ideal place besides producing a strong hardy seedling that will give a sturdy growth. Mentioning Mr. Guldemon's planting above—his plantings are in August, of course.

IMPERMEABLE SEED COATS

If seed fails to germinate due to impermeable seed coats, it can be determined if some of the seed is placed in water to see if it swells. If it does not swell, indicating that the seed-coat is impermeable, filing the seed, where only a small amount is had, will usually overcome the trouble.

ASPARAGUS SPRENGERI

variety VARIEGATUS

The clododes are variegated green and cream; do not feed too much or the plant may be pale yellowish green. Have you noticed that quite a few species of Asparagus are listed in the Catalog?

The Casserole Method

The use of a covered dish in seed germination is not a new method. The main point is to have a covered dish which prevents evaporation. In many old books this is mentioned as a "bell-jar." In the greenhouse a larger use of this principal is the Warder Case, which is really a little glass house.

A high temperature and high moisture can be held in this way, which is so necessary for many seeds to germinate.

In all homes a casserole can be found and so this is called the "Casserole Method". The following will explain the use with very small seeds.

Such seeds as the Begonias, various Gesnerias and Bromeliads, Petunias, Primroses and African Violets, this method works nicely.

The best medium is milled sphagnum mixed with about an equal part by volume of sand. Do not use too fine a sand, a little coarse and sharp is best. The sphagnum usually has a few coarse stems in it and these should be picked out so that the mixture will be fine.

After the above is prepared, put it in a covered pan and boil for 30 minutes so as to sterilize it. Place a good inch of this in the casserole, press down and level off.

Sprinkle the seed over this seed bed but do not cover. Place lid on and leave till germination starts. Place the dish in a warm part of the room, which is up 6-7 feet from the floor. Usually a dark part of the room suits most seeds altho some do best in good light.

When the seeds germinate, the casserole must be placed in the light but not strong sunlight. Turn the dish a couple times a day so as to give all seedlings equal light. You want have much trouble in damping-off if the dish is sterile and the lid lifted 4-5 times a day to give fresh air, but replace it at night. As the seedlings gain in size, the lid can be left off longer.

A. W. Gentry. N. Y.

CLEMATIS

The large flowered kinds can be easily grown from seed sown during March in pans of sandy soil; place it in a cool closed frame; cover the pans to keep the light out; keep watered; they germinate the following March when the seedlings will appear as wire-like shoots, when they should be given light and air.

Pot the seedlings in small pots in soil containing 3 parts sifted loam and 1 part leaf mould with plenty of coarse sand. Return plants to the closed frame and hold till they are well established. The early flowering species can be planted in the fall where they germinate in January. Many Clematis species, if sown in heat in February will germinate in 30 days.

AUSTRALIAN READERS

Readers and customers in Australia can send remittances to me addressed to Boronia, the Australian shilling at 16 cents; personal check are all right as they are banked in Australia. Letters and orders can also be mailed to me at Boronia, where they will be opened and the contents air-mailed on here. No seed stocks are carried at Boronia.

This arrangement will meet your currency regulations.

INFLATION.

Inflation to the average person means higher prices; it really is cheaper money.

This comes about mainly in two ways. First, lowering the value or worth of the unit of value—the dollar, in our case and it certainly has been lowered! In 1929, 5½ billion dollars was in circulation, the highest in our history at that time. This dollar had a definite value measured in gold. Today we have between 30 and 100 billion with nothing to measure its value; so cheaply is our money considered by our own government that we even furnished the Russians with the plates to print it from! Millions were

printed and used by them at our expense!

The second reason for cheaper money is where any force is allowed to be applied by any group, whether it be bankers or trade unions. In the present situation it is the national labor unions. To give them a lawful right to shut up a man's business and to even bankrupt him, till he pays any wage they have a mind to ask, is the same as if the farmer organized and said the consumer either paid \$1.50 a dozen for eggs, or go without. If all his produce was priced on the same level, then this alone would make the dollar worth but a third of what it was before the decision of the farmer to raise meat and eggs and wheat. Force applied

to get higher prices benefits the group engaged in it so long as other groups are not so organized. If everyone was unionized, what good would raising prices be, whether it was actual wages or the product of labor, such as milk or bread?

Where will this all end at?

ADENOPHORA CORLESTIS

Difficult to transplant; sow thinly in small pots and transplant as soon as two leaves appear or sow where they are to grow; they have pale lilac hanging bells.

SUBSCRIPTION PRICE: \$2.00 next 9 issues

MINNESOTA WILD FLOWERS

MINNESOTA NATIVE PLANTS

The following plants are delivered postpaid during the spring and again in the fall, when they are in condition for shipping.

The prices asked are very low and any one wanting these beautiful natives from the far North should order NOW.

AQUILEGIA CANADENSIS. The American Columbine. Good for the rockery or the border; sun or part shade.

ASARUM CANADENSIS. Wild Ginger. Good ground cover for shady places; if you need a quantity ask for special price.

ARISAEMA TRIPHYLLUM. Jack-in-the-Pulpit. A hard-to-find wood plant that should be in every wild garden.

CAULOPHYLLUM THALICTROIDES. Blue Cohosh. Deep blue berries in fall; 2 ft.

CLINTONIA BOREALIS. Bluebeads. Small lily-like bloom in spring; very dark blue berries in the fall; acid soil.

DODECATHEON MEDIA. Shooting Stars. White to rosy purple Cyclamen-like blossoms in the spring.

GERANIUM MACULATUM. Wild Geranium. Rosy pink blooms for the rockery or border; 1 foot high.

HEPATICA TRILOBA. Round Lobed Hepatica. White to deep blue blossoms; acid.

IRIS VERSICOLOR. Blue Flag. For moist places; see Iris list for other species.

MIMULUS RINGENS. Monkey Flower. Blue Snapdragon-like blossoms with yellow centers; 2 feet high.

PARNASSIA PALUSTRIS. Grass Parnassus. White buttercup-like blossoms on slender stems.

POLYGONATUM BIFLORUM. Solomon's Seal. Drooping white bells, followed by nearly black berries.

SANGUINARIA CANADENSIS. Blood Root. White blossoms in early spring; showy leaves until late summer.

TRILLIUM CERNUUM. Nodding Trillium. Drooping white blossoms.

UVULARIA PERFOLIATA. Merrybells. Drooping yellow bells in the spring; easy to grow in the shade. It is good.

VIOLA BLANDA. Sweet White Violet. Fragrant small white Violet for naturalizing in the wild garden.

VIOLA RUGULOSA. Tall Stemmed White Violet. Blooms nearly all summer; ideal for your wild garden, too.

VIOLA CONSPERSA. Dog Violet. Pale blue flowers in early spring; for the wild garden for early flowers.

ATHYRIUM FILIX-FEMINA. Lady Fern. One of the easiest ferns for shady places in the border or wild garden.

DRYOPTERIS DILATATA. Mountain Fan-fern. Beautiful evergreen fern; best in moist shady places in the border or in the wild garden or woods.

DRYOPTERIS LINNEANA. Oak Fern. A beautiful tiny six inch fern with branched fronds that should go well in any shady moist place where small ferns would do.

DRYOPTERIS PHEGopteris. Narrow Beech Fern. Arrowhead-shaped fronds on 6-8 inch stems; another fine fern for moist shady places in the border or wild garden.

DRYOPTERIS THELYPTERIS. March Fern. Upright fronds to 18 inches; moist spots in either sun or shade.

PTERETIS NODULOSA. Ostrich Ferns. For sun or shade; a graceful fern growing to 5 feet; a sight in the woods or wild garden where the sun gets thru.

PRICES: On your selection of ANY 6 plants \$1.80; ANY 12 for only \$3.00; or you can select 35 plants any way you wish for only \$8.00; postpaid. Certainly a bargain. Remember these are all HARDY.

AMELANCHIER CANADENSIS. June Berry; a hardy shrub.

ARONIA MELANOCARPA. Black Chokeberry; wild life shrub for food and shelter.

CORNUS ALTERNIFOLIA. Pagoda Dogwood.

CORNUS STOLONIFERA. Red Osier Dogwood.

ILEX VERTICILLATA. Winterberry; a good shelter shrub for wild life.

DIRCA CANADENSIS. Leatherwood. A small plant 6-12 inches high.

SAMBUCUS PUBENS. Red Berried Elder. This is a good shrub for a game shelter as well as for food.

SYMPHORICARPUS RACEMOSUS NANUS. Dwarf Snowberry; a good shrub for difficult embankments.

VIBURNUM DENTATUM. Arrowwood.

VIBURNUM LENTAGO. Nanny Berry.

PRICES: ANY TWO PLANTS for \$1.00 or ANY 6 for only \$3.50; postpaid. If you wish any quantity for planting for bird shelter and food, write for special prices.

CYPRIPEDIUM ACAULE. Pink Moccasin Flower.

CYPRIPEDIUM PARVIFLORUM. Small Yellow Lady Slipper.

CYPRIPEDIUM SPECTABILE. Showy Lady Slipper.

CYPRIPEDIUM PRICES
ANY TWO for ONLY \$1.50; ANY six for only \$4.00. This price is very low for these very hard-to-find plants

For Shut-ins

There are many people who are confined to their chair due either to age or some sickness and who have hours to spend alone and with nothing to keep them interested. I just visited such a person who is close to 70 and just had both legs taken off above the knees! "I just set here! I would rather be dead", was his remark, made several times during the visit.

It has been our thot for some time to make up a collection of, say, 4-5 kinds of seeds in a gift package and to meet several different types. And included with each collection would be the necessary growing or germinating container necessary for the kind of seed sent as well as the soil medium AND with a printed direction for handling the collection.

A collection should be made for, say \$1.00 and could be given as gifts to these unfortunate people. The joy in seeing a new growth develop day by day, right before them; watching the sprout appear, then the leaves, etc., certainly would make their days more happy and enjoyable.

WHY cannot our readers make a suggestion along this line? Can you, from experience in growing indoor plants, make suggestions? It seems that the kinds to grow should be rather easy and have a noticeable growth, especially if a few of the seedlings can be potted up.

LEAF MOULD.

This is a term much mis-used in horticulture literature. Even the spelling is either 'mold' or 'mould'. The dictionary (ours) even skips the word; should it be leaf mould or leaf-mould?

Leaf-mould as taken from the woods will vary considerably. A good leaf-mould will contain a sandy loam soil, rotted oak leaves and to this is usually added fine charcoal, coarse silver sand and peat. It makes a light soil but its most valuable part is its bacterial content.

This soil can be screened thru various sized screens for use as required.

If this soil is secured from new lands, where little chance of disease or pests may be had, it may be all right as it is but usually it pays to sterilize it before using, especially for greenhouse pot plants.

SUCCULENTS IN GENERAL.

Usually the best time to sow the seed of succulents is during the spring months and it is claimed that the seed pan must be closed with a glass cover because the relative atmospheric moisture content should be about 90% and the temperature 85-90 degrees F.

Most seed germinates quickly in 3-4 days, but some may require 2 months. It is important to remove seedlings immediately from the moist germinating container, otherwise they will rot. The soil should be porous well-rotted leaf mould plus twice as much washed coarse sand. It is best to sterilize the soil.

Use shallow seeds pans, covering surface with a layer of sand on which is sown the seed; cover thinly with a layer of sand, not more than the thickness of the seed. Shade the seed container and water from below; usually one good watering at the start is sufficient and none is required after the planting.

XERONEMA CALLISTEMON

Discovered in 1924 on Poor Knight's Island. It is easy to grow in any free, loose soil; plenty of sunshine.

It is not too well known as yet and I have never been able to locate seed; probably some of our readers in that section of the world can advise. It can be grown from seed and the seedlings do best when pot grown.

SUBSCRIPTION PRICE: \$2.00 next 9 issues



Erythrina arysynthia — Picture by L.A. S. Grumbly, Kenya, East Africa.

Proteaceae

Marie M. Vogts, in *S. Af. Botanical Journal*

The seed sowing period—the only one that is advisable—is exactly the same as in the winter-rainfall area: from the middle of March to the end of May. Odd seeds, especially of *P. cynaroides*, will often germinate in the spring, but loses are too great to recommend this even tho the seeds may have been artificially heated or frozen.

Great care should be taken that the seedlings of those Proteas that germinate quickly like *Serruria florida* are protected from frost, as the young plants appear during the worst of winter. Strangely enough it seems that frost is a beneficial factor in seed germination. The longer the period of germination the higher the percentage after severe cold.

My experience has been that I have had the optimum germination of *L. reflexum* and *P. barbiger* after heavy frost. Of course, there is hardly any danger of these young seedlings being harmed by frost, as *P. barbiger* is exceptionally hardy and the germination period of *L. reflexum* is from 4-6 months. Yet despite the fact that a cold winter aids germination, the seeds have to go in while the earth is still warm.

Since the seed beds have to be kept damp it appears that covering the seed with some compost or grass, which is often successful in the Western Province, is fatal here on account of the sudden heat of a winter mid-day. This causes 'sweating' and damages the germinating seed. Seed should be sown so shallow that one is almost afraid that the watering will uncover them.

Here I should like to add something about the advantages of sowing seeds in situ. It does not. I admit, apply to the summer-rainfall area alone. But the advantages of seedlings standing in situ through their first summer, where there is summer rain, are naturally much greater than where there is a hot, dry summer to cope with.

If 20 seeds are sown on a small round bed with an eye to the desired grouping, and 15 seeds germinate, 3-5 can be left there and the others transplanted when still very small. The few that are left undisturbed will almost without exception flower in 16 months to two years from sowing date, depending upon the

species; while the transplants invariably take longer, and how much longer is due to the extent to which the roots have been nipped off or disturbed.

NOTE: This is but part of the article and while it applies to South African growing conditions, it is reprinted here in part, because it contains many good points.

WEST AUSTRALIAN FLORA

All the states are richly endowed with attractive flora, West Australia stands alone in this respect. Its cut flowers are sent by air regularly to the eastern States and many tourists from the East are regular visitors to the West during September and October, the best months for nature's display.

The following are some of their finest, easily grown shrubs: *Howea elliptica*, *Chorizema cordata*, *Dryandra formosa*, *Boronia megastigmor*, *Acacia Drummondii*, *Banksia coccinea* and *Menziesi*, *Geraldson* and *Waxflower*. There are a host of other fine shrubs and trees in the country but I think the above would be a good introduction to West Australian flowers.

They are easily raised from seed although some may take a month or two to germinate. Give them the same treatment as South African seeds and you will have no trouble.

As reported by Thomas A. Browne, in the *Journal of the Botanical Society of South Africa*.

CLEMATIS ARE LIME LOVERS

Nearly all Clematis are lime lovers; only a few species such as *C. Baldwinii* and *C. crispa Walteri* will thrive in acid soils.

It can be a safe rule to follow when setting out all sorts of Clematis to see that the soil is loamy, fairly rich and well drained and that shade and protection to the lower part of the plant is very important.

A good mulch is necessary at all times and much as with Lilies, the roots should be cool; thus shade at this point and a good mulch is of prime importance.

It is for this reason that one usually sees fine Clematis vines where there is shade on the south side.

CANADIAN CUSTOMERS

If it will be of help to you when you are making a remittance, you can use personal checks at par, no exchange necessary as they are cleared in Canada.

NEW CULTURAL DIRECTION IN NEXT SEED CATALOG

Beginning in the next Seed Listing which we hope will be finished in September, the cultural directions will be expanded considerably. A general list of various methods will be listed under a number for each, followed by one or two letters for special directions and added to these directions will be special cautions under the species.

The zone map which is on the back cover of the magazine also will further help in knowing the territory in which a plant can be grown out doors. It is hoped that readers and customers will feel free to add to this information as well as to make corrections, that the information be correct and helpful.

There will be a charge of 25¢ for the Catalog after the new issue in September; unless you were a purchaser or subscriber to the magazine, enclose 25¢ in stamps or coin. This will save us mailing a postal advising of the cost; the 25¢ will be credited on any order of \$2.00 or more; 1955 customers will receive a Catalog without asking as will also subscribers.

PALM SEED

Many Palm seed should be planted upon arrival to us and thus it is advisable to place your order well in advance. Any seed coming from tropical areas or those that have to cross the equator, lose much of their germination power and at best have a rather low germination percentage.

It is advisable to soak the seed in warm water for 4-6 days upon arrival, especially if the seed is dry. Most Palms seed must be started under glass or in frame; open seed beds are usually used by greenhouse growers.

A good soil medium for starting the seed is sharp sand to which a good amount of milled sphagnum moss has been mixed.

When special treatment is required, note cultural directions under the listing in Catalog for the species. Palms are not hard to grow.

FOXGLOVE or DIGITALIS

While some advise starting Foxglove in pots or flats, it may be best to grow them outside, as seedlings under glass may become weak and spindling.

When grown outside they are always strong and sturdy. Use care in watering and shading when the seedlings are just pricked out.

In the autumn carefully lift the plant, being sure to preserve a good ball of earth on the roots which are very fibrous, for they will suffer a set back if done carelessly.

The lifting of the plant hardens them for the winter and induces a floriferous habit to a very marked degree.

PLANTING PANDANUS SEED

Joe Elias of Philadelphia writes: Plant the nubby end up; if planted upside down they will not sprout. Cover with at least ½ inch of soil and keep moist but not wet. I use half sand and half peat moss. You may receive from one to six trees from each seed. If more than one seedling sprouts from a seed, separate when about 6-8 inches high, putting one in each can or pot.

A friend in Florida suggested to him that it would be better to cover the seed only 1/3, leaving 2/3 exposed.

ANTENNARIA TOMENTOSA

This is one of the plants that makes a valuable ground cover in the Tulip beds.

It forms a close dense carpet of silvery gray leaves and not being a deep rooter, it does not weaken the soil to such an extent that the bulbs beneath are not deprived of much nourishment.

It is hardy in most gardens up into the IV zone. The flowers in themselves are not ornamental, it is the foliage that makes it especially attractive. Does well in a rather dry soil.

GARDEN SUPPLIES

SPHAGNUM FOR GERMINATING



It is simply impossible to germinate many seeds without the use of milled sphagnum moss. If you were over your seed pans all day long as the professional grower is you may find you could get along without it, but no professional grower would fail to have the fine moss on hand. It will save many a packet of valuable seed from loss due to an hours neglect, that cannot be avoided by one having other duties.

Now packed in ½ bushel boxes containing approximately ½ bushel; \$1.50 postpaid.

PEAT MOSS

Necessary in the germination of many seeds such as Ilex, Vacciniums and other acid loving plants

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| | Postpaid |
| 1 Peck Packages..... | .70 |
| 3 1/2 " " "..... | 1.30 |

ROSE PLANT FOOD

100% plant food, organic formula of dried blood, fish scraps, bone meal, guano, potash, cotton seed meal, nitrate of soda, sulphate of ammonia, poultry manure powder and superphosphate, a 7-8-5 formula.

ONE LB. PKGS. 75¢

Du PONT 10% DDT INSECT POWDER

Controls cockroaches, fleas, ants, bed bugs, moths, ticks, carpet beetle and silver fish.

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| 1 Oz. Puffer Cans, Postpaid..... | .25¢ |
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ACTIVO

Quickly and cheaply makes rich, soil building humus from house and garden wastes.

Energizes bed, pot, garden and orchard soils.

COMPOSTING - Bring following types of materials into well drained heap, large barrel or hogshead, or ventilated garbage can: table scraps, fruit wastes, leaves,

TEMPERATE ZONE PLANTS

Many temperate zone plants require a period of storage in a moist condition and at rather low temperatures to induce germination.

It is a sort of after-ripening and included in what is termed "stratification."

Seeds must always be soaked at start of stratification; this is especially required in many tree and shrub seeds.

LIME HATERS

If you are growing any lime haters and they start too "yellow", it most likely can be checked by adding a teaspoonful of Epsom Salts to 2 gallons of water and using this

grass clippings, garden rubbish, sewage or sludge, citrus pulp, peat, etc:

Use as much garbage and other rich wastes as possible. Neutralize with ground limestone, and add a few shovels of ordinary soil for compacting the mass. Mix in 1-3 lbs. of ACTIV-O for each (approx) 250 lbs. compost: Moisten. Keep moist, but NOT wet. Use greater amounts of garden soil to compact leaves and other light, dry materials.

Better, mix in a handful or so (for each bushel of compost) of commercial fertilizer or plant food or ammonium sulphate, ammonium nitrate, etc.

| | |
|-----------------------------------|--------|
| No. 2. (approx. 2 1/2 lbs. gross) | \$1.35 |
| No. 7: (Approx. 6 1/4 lbs. gross) | \$2.20 |

FERTO POTS

FERTO-POTS have taken the gardening world by storm. Users highly enthusiastic. Millions sold.

Pots made of rich rotted cow manure in automatic pot machines and kiln dried. No wilt, no set-back; quicker, better results if seed, bulbs, plants, cuttings are started in FERTO-POTS. When transplanted outdoors pot and all goes into the ground. Pots soften up in the moist soil and feed the plants. Excellent results as liners inside clay pots for African Violets and other house plants. FERTO-POTS are a boon to professional growers and home gardeners alike. Shipped prepaid at following prices: (Add 10% for Pacific Coast States).

PRICES: All prepaid by parcel post.

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| No. 2. Dozen 55¢; 100, \$3.00; 500, \$11.50 |
| No. 2 1/2 Dozen 75¢; 100, \$3.50; 250, \$6.60 |
| No. 3 Dozen 85¢; 100, \$3.50; 250, \$8.50 |

HY-GRO PLANT FOOD

A SOLUBLE PLANT FOOD

A soluble plant food that can be used while you water your plants. It is immediately available as the solution penetrates into the soil and continues to feed over a long period. Will not harm roots or leaves. Can also be used in transplanting. Best applied to pots when they are dry and need watering.

Starter Solution for Transplanting

for flower and vegetable seedlings, perennials, shrubs, etc. Checks wilting and gives transplants a healthy start for rapid growth.

FORMULA: 13 - 26 - 13

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| 3 Oz. Bottle. Postpaid | .60¢ |
| 3 Bottles, postpaid | \$1.10 |

HAMMOND'S SLUG SHOT

Destroys many insects that prey upon house and garden plants.

It is most effective when used as a powder and applied lightly over the infected parts. One application is generally sufficient.

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| 1 lb. Cans. Postpaid..... | .75¢ |
| 3 Cans. Postpaid..... | \$1.50 |

to water the plants. This is also good where the water used is 'hard' and contains an excessive amount of lime.

SEEDS WANTED

The Japanese wild flower, *Glaucidium pal-matum*. There has been 3 new subscribers from Japan this month and we would appreciate their cooperation. Old sources in Japan have mostly disappeared, to our sorrow and new contacts will have to be established.

Clematis verticillaris, (Bell Rue), it is a native American species, not commonly found.

NATIVE WILD FLOWER PLANTS FOR FALL DELIVERY

The following hardy herbaceous perennial plants can be supplied in the spring or fall. The prices quoted are postpaid and no orders for less than \$3.00 can be handled at the prices quoted. Write for prices where more than one of a kind is wanted. Spring delivery usually from March -st. to May 15th. Fall delivery starts in August and into December. Winter delivery can be made in most cases, if desired.

ADD 25¢ TO EACH ORDER—POSTAGE

POSTPAID. PRICE EACH.
(For descriptions see regular catalog.)

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| ACONITUM reclinatum | 40 |
| —uncinatum | 35 |
| ACTAEA alba | 40 |
| —rubra | 40 |
| ALLIUM tricocum. Wood Leek | 35 |
| ARALIA racemosa | 45 |
| ARUNCUS sylvestris. Goat's Beard | 40 |
| ASARUM canadense. Can. Wild Ginger | 30 |
| —shuttleworthii. Mottled Wild G. | 40 |
| ASTILBE biternata | 40 |
| BAPTISIA australis | 45 |
| —tinctoria. Yellow Wild Indigo | 35 |
| CAREX fraseri | 40 |
| CAULOPHYLLUM thalicroides | 35 |
| CIMICIFUGA americana | 35 |
| —racemosa. Cohosh Bugbane | 40 |
| COLLINSIA canadensis | 30 |
| DISPORUM lanuginosum. Fairybells | 35 |
| EPILOBIUM angustifolium | 35 |
| EUPATORIUM urticaefolium | 40 |
| GERANIUM maculatum | 30 |
| GILLENIA trilobata. Bowmansroot | 40 |
| FRAGARIA virginiana | 30 |
| HOUSTONIA purpurea | 30 |
| HYDRASTIS canadensis. Goldenseal | 30 |
| —Large sized roots | 45 |
| LIATRIS pycnostachya. Cattail Gay F. | 40 |
| —scariosa. Lge. Button Snakeroot | 35 |
| —spicata. Spike Gayfeather | 35 |
| MITELLA diphylla. Bishop's Cap | 40 |
| PANAX quinquefolium. Am. Ginseng | 40 |
| PEDICULARIS canadensis. Betony | 35 |
| PODOPHYLLUM peltatum | 35 |
| POLYGONATUM biflorum | 35 |
| SAPONARIA officinalis. B. Bet. | 35 |
| SMILACINA racemosa | 35 |
| SOLIDAGO canadensis | 30 |
| —odora. Fragrant Goldenrod | 35 |
| STENANTHIUM robustum | 40 |
| STREPTOPUS roseus | 40 |
| THALICTRUM polygamum | 40 |
| THERMOPSIS caroliniana | 45 |
| TIARELLA cordifolia. Foamflower | 40 |
| TRADESCANTIA virginiana | 35 |
| VERONICA virginica | 40 |
| VIOLA blanda. Sweet White Violet | 35 |
| —cucullata. Blue Marsh Violet | 35 |
| —hastata. Halberd-leaved | 35 |
| —rotundifolia. Yellow Roundleaf V. | 35 |
| —sagittata. Arrowleaf Violet | 35 |
| Yucca gloriosa. (patens) | 60 |
| AQUILEGIA canadensis | 40 |
| ARISAEMA triphyllum. J-in-Pulpit | 40 |
| ASCLEPIAS tuberosa | 50 |
| CAMPANULA divaricata | 35 |
| CHAMAELIRIUM luteum | 35 |
| CLINTONIA borealis. Bluebead | 40 |
| —umbellulata | 35 |
| CONVALLARIA majalis. L-of-Valley | 40 |
| COREOPSIS lanceolata | 40 |
| DICENTRA canadensis | 35 |
| —cucullaria. Dutchman's Breeches | 35 |
| —eximia. Bleeding Heart | 70 |
| DODECATHEON meadia | 40 |
| ERYTHRONIUM americanum | 35 |
| EUPHORBIA corollata | 35 |
| GENTIANA andrewsii | 40 |
| HEPATICA acutiloba | 45 |
| —triloba | 45 |
| HEUCHERA villosa. H. Alumroot | 40 |
| PHLOX divaricata. Blue P. | 40 |
| POLYGALA senega. S. Snakeroot | 35 |

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| POLYGONATUM commutatum | 45 |
| SANGUINARIA canadensis. Bloodroot | 40 |
| SAXIFRAGA michauxii | 40 |
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| SISYRINCHIUM angustifolium | 35 |
| STOKESIA laevis | 35 |
| THALICTRUM dioicum | 40 |
| TRILLIUM cernuum | 30 |
| —erectum. Purple Trillium | 45 |
| —album. Wax Trillium | 30 |
| —grandiflorum. Snow Trillium | 45 |
| —luteum. Yellow Trillium | 35 |
| —sessile. Toad Trillium | 30 |
| —stylosum. Rose Trillium | 45 |
| —undulatum. Painted Trillium | 45 |

TRILLIUM SPECIAL
FIVE each above 8 species, 80 roots
for only \$25.00, postpaid.

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| UVULARIA grandiflora. Merrybells | 40 |
| —perfolata | 35 |
| —sessilifolia | 35 |
| —canadensis | 40 |
| —pedata. Bird'sfoot Violet | 35 |
| —bicolor | 40 |
| YUCCA filamentosa | 50 |
| —gloriosa. Moundlily Yucca | 60 |
| ZYGADENUS muscaetoxicum | 35 |
| XEROPHYLLUM asphodeloides | 50 |
| LYCHNIS | |
| —arkwrightii | 1.00 9.00 |
| —chalcedonica | .60 3.50 |
| —haageana hybrids | 1.20 10.00 |
| —viscaria splendens | .40 4.00 |
| MALVA moschata | |
| —Dark rose OR white | .40 2.40 |
| MYOSOTIS alpestris | |
| —Blue Basket. Compact | 1.70 15.00 |
| —Carmine King | .95 9.00 |
| —Messidor. Rich blue | .95 9.00 |
| —Express. Early lge. fl. blue | 1.00 9.00 |
| —Victoria. Either white, indigo or rose | |
| (State which) | 1.20 14.00 |
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| —missouriense | 2.50 21.00 |
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| —Laura. Rosy lilac | 3.50 23.00 |
| —Golden Yellow, Blotched | 3.00 22.00 |

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NATIVE FERNS

These are easily transplanted and here in Michigan, we have 100% stands with fall planting. See terms on front cover.

ADD 25¢ ON EACH ORDER—POSTAGE POSTPAID. PRICE EACH

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| ADIANTUM pedatum. Maidenhair | 40 |
| ASPLENIUM platyneuron. Ebony S. | 50 |
| —trichomanes. Maidenhair | 45 |
| ATHYRIUM filixfemina. Lady F. | 45 |
| BOTRYCHIUM virginianum. Rattlesnake Fern | 40 |
| CAMPTOSORUS rhizophyllus. Walking F | |

ADD 25¢ TO EACH ORDER—POSTAGE

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| Good in dry shaded rock | 50 |
| CYSTOPTERIS bulbifera. Good RG | 40 |
| DICKSONIA punctilobula. Hay-scented F. | |
| Shade or open situations | 40 |
| DRYOPTERIS filix-mas. Male F. | 40 |
| —goldiana. Goldie Fern | 45 |
| —dilata. Mountain Fancy Fern | 40 |
| —hexagonoptera. Winged Wood F. | 53 |
| —linneana. Oak Fern | 50 |
| —marginalis. Leather Woodfern | 40 |
| —spinulosa. Toothed Woodfern | 45 |
| —thelypteris. Marsh Fern | 40 |
| LYGODIUM palmatum. Climbing F. | 55 |
| ONOCLEA sensibilis. Sensitive F. | 35 |
| OSMUNDA cinnamomea. Cinnamon F. | 40 |
| —claytoniana. Interrupted F. | 45 |
| —regalis. Royal Fern | 50 |
| PELLAEA atropurpurea. Cliff Brake | 55 |
| POLYPODIUM vulgare. C. Polypody | 45 |
| POLYSTICHUM acrostichoides. Christmas Fern. Used by florists | 35 |
| PTERETIS nodulosa. Ostrich Fern | 45 |
| PTERIDIUM aquilinum. Bracken | 30 |
| WOODWARDIA virginica. V. Chain F. | 40 |

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HARDY ORCHIDS

POSTPAID. PRICE EACH.

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| APLECTRUM hyemale. Puttyroot | 50 |
| CALOPOGON pulcaellus. Grass-pink O. | 50 |
| CYPRIPEDIUM acaule. Pink Lady S. | 50 |
| —pubescens. Yellow Ladyslipper | 65 |
| —spectabile. Showy Ladyslipper | 75 |
| HABENARIA ciliaris. Yel. Fringed O. | 50 |
| —psycodes. Sm. Purple Orchid | 75 |
| ORCHIS spectabilis. Showy Or. | 45 |
| —parviflorum. Yellow Lady S. | 75 |

NOTE: I can supply large clumps if desired or if you wish to make any large planting. I can quote special prices. They are not difficult to transplant to a woody soil.

| | |
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| SARRACENIA flava. Pitcher-plant | 85 |
| —purpurea | 95 |
| —rubra. Sweet P. | 90 |
| SAXIFRAGA virginiana | 40 |
| TYPPHA latifolia. Common Cattail | 40 |
| VERATRUM viride. False Hellebore | 55 |
| VERNONIA noveboracensis. Ironweed | 35 |

BOG PLANTS

ADD 25¢ TO EACH ORDER—POSTAGE

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| ACORUS calamus. Sweet Flag | 40 |
| ASTER puniceus. Swamp Aster | 35 |
| CALTHA palustris. Marsh Marigold | 40 |
| CHELONE glabra. White Turtlehead | 35 |
| —lyoni. Pink Turtlehead | 40 |
| CICUTA maculata. Water Hemlock | 35 |
| CORNUS canadensis. Bunchberry | 75 |
| DIPHYLLEIA cymosa. Umbrella-leaf | 40 |
| EUPATORIUM purpureum. Joe-Pye-W | 35 |
| HELENIUM autumnale | 35 |
| IRIS pseudacorus. Yellow Flag | 40 |
| —versicolor. Blue Flag | 40 |
| LOBELIA cardinalis. Cardinal Fl. | 40 |
| —syphilitica | 40 |
| MERTENSIA virginica. Va. Bluebells | 35 |
| MONARDA didyma. Oswego Beebalm | 40 |
| PHYLLOSTACHYS aurea. Golden Japanese Bamboo | 1.35 |

HARRY E. SAIER Dimondale Michigan

DELIVERY ON THE PLANTS LISTED HERE CAN BE MADE IN THE FALL OR SPRING — THERE ARE MANY MORE NATIVE PLANTS AVAILABLE.

NEW RHODODENDRON SEEDS

The following Rhododendrons are from a well known English collection.

The species offered breed true to type with a few variations sometimes in the plants produced.

The hybrids, naturally, do not breed exactly true to the parent plant, as some variation can be expected towards either of the parents of the original cross. Naturally some should prove exciting and others may not be so interesting. It is the practice of many Rhododendron growers to rogue the more vigorous plants, as it has been found that the better colors result from the weaker seedlings as is also the case in other flowers such as the Stocks and Petunias.

As to hardiness, those marked 'A' will undoubtedly grow in our zone IV. 'B' are also hardy but these will require some shade to obtain best results. 'C', probably should be planted in zone V or VI, but require shelter if they are liable to have cold spells.

CULTURE: The growth of seedlings is best if the seed is sown in heat, about 65 degrees Far, in January or February, thinly on fine peat, covered with glass and shaded; germination takes about 1-3 weeks, and as soon as seedlings appear, air is admitted gradually.

When the cotyledons are well developed they are uncovered completely. Then prick off into a mixture of peat, with a little loam and coarse sand added. By July or August they should be about 1-3 inches high and ready for planting out in frames, protecting them from frosts. The secret of the whole process being to maintain rapid growth continuity for the first year or two. The soil must be kept slightly on the acid side and rain water is to be preferred to regular tap water.

SYMBOLS USED: A.M. and FCC (first class certificate) are from the RHS in England.

- Arthur Osborne. RHOD-W1. 60¢
Dark scarlet; (B); AM 1933; very good.
- Azor. RHOD-W3. 60¢
Soft salmon; (B); AM; 1933; very good.
- BBrittania. RHOD-W6. 60¢
Bright cream-red; (B); AM 1921; good.
- Cornish Cross. RHOD-W7. 60¢
Rose-pink; (C); very good.
- Corona. RHOD-W8. 60¢
Coral-pink; (C); AM; very good.
- Countess of Derby. RHOD-W9. 60¢
Rose-pink; (B); FCC; good.
- Doncaster. RHOD-W10. 60¢
Scarlet-crimson; (B); good.
- Elspeth Sloucock. RHOD-W11. 60¢
Scarlet; (B); good.
- Fireball. RHOD-W12. 60¢
Bright red; (B); AM; good.
- Essex Scarlet. RHOD-W13. 50¢
Deep crimson-scarlet; (B); AM; good.
- Garnet. RHOD-W14. 50¢
Deep salmon-rose; (C); AM; good.
- Gills Gloriosa. RHOD-W15. 60¢
Pink; (D); AM; good.
- Helen Fox. RHOD-W16. 60¢
Deep crimson-scarlet; (E); very choice.
- Lady Longman. RHOD-W51. 50¢
- Loderi King George. RHOD-W19. 50¢
(C).
- Koodoo. RHOD-W20. 50¢
(C).
- Pinky. RHOD-W22. 50¢
(C) scented.
- Sir Joseph Hooker. RHOD-W23. 50¢
(C).
- Venus. RHOD-W24. 50¢
(C).
- Mrs. Charles Pearson. RHOD-W26. 50¢
Blush mauve, spotted; (B); AM.
- Mother of Pearl. RHOD-W27. 60¢
Blush turning snow; (B); AM; very good.
- Mrs. Lionel de Rothschild. RHOD-W28. 50¢
White with red spot; (B); AM; good.
- Mrs. W. C. Slocock. RHOD-W29. 60¢
Apricot pink shaded; (B); AM; good.
- Penjerrick. RHOD-W30. 60¢
White, creamy yellow; (C); AM; extra.
- Polar Bear. RHOD-W32. 60¢
White, scented; (C); FCC; extra good.
- Rosy Bell. RHOD-W34. 50¢
Old rose; (C); AM; good.
- Rose Perfection. RHOD-W35. 50¢

- Rose-pink; (B); FCC; good.
- Shilsonii. RHOD-W36. 60¢
Blood-red; (C); AM; very good.
- Sir Charles Lemon. RHOD-W39. 60¢
White; (D); very choice.
- Sarita Loder. RHOD-W40. 60¢
Pale salmon-pink; (C); AM 1934; good.
- Tally Ho. RHOD-W41. 06¢
Bright scarlet; (D); FCC, 1933; very good.

NEW SPECIES JUST RECEIVED.

- Albrectii. RHOD-16. 50¢
- Auriculatum. RHOD-41. 50¢
- barbatum. RHOD-49. 50¢
- Campilacarpum. RHOD-74. 50¢
- decorum. RHOD-117. 50¢
- delliensis. RHOD-119. 50¢
- Dispreps. RHOD-130. 50¢
- raconte. RHOD-146. 50¢
- Fargesii. RHOD-147. 50¢
- Focclactium. RHOD-151. 50¢
- Foune. RHOD-161. 50¢
- Griersonianum. RHOD-178. 50¢
- Naemolodes. RHOD-182. 50¢
- nerulifolium. RHOD-270. 50¢
- Orectephes. RHOD-280. 50¢
- rubigiosum. RHOD-347. 50¢
- telthreopium. RHOD-397. 50¢
- Sutchuenensi. RHOD-392. 50¢
- Thomsoni. RHOD-399. 50¢
- timeyum. RHOD-400. 50¢
- Vaseyi. RHOD-415. 50¢

SIFTING SOILS

The sifting of soil is necessary in some instances, but it can be over done; practice it only when absolutely necessary.

For sifting soil for potted plants, the soil will have to be fine enough to pass between the ball of roots and the side of the pot; use a 1/2-inch mesh screen. For tiny seedlings being potted into thumb-pots, it must pass thru a 1/4-inch mesh screen. The addition of some fine sharpe sand will help to prevent a too compact soil.

Leaf-mould can be screened thru a 1-inch mesh screen to remove coarse material, as leaves and pieces of rotted wood should always be removed.

For sifting sand or surface soil on seed pans, a small 1/8-inch screen is very handy.

Just a word about soil. You can be easily fooled just by looking at it; it is always best to know the soil from seeing field crops growing on it. In our own growing, we usually stake out a spot in a bean field where the beans are growing perfectly and then spading up only the top 3-5 inches for use in growing plants indoors or in a frame.

ANEMONE VERNALIS

A perfect alpine but difficult to transplant; raise it from seed in small pots; soil should have leaf mould and it should not get dry during the growing season.

GARDEN SUPPLIES

VERMICULITE

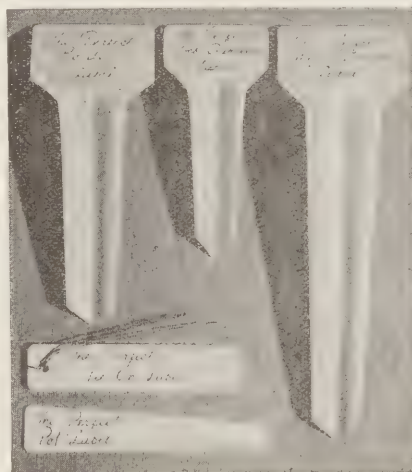
Special for seed beds, for cuttings or for mixing in potting soil. It comes in three sized paper bags; the small size will take care of the germination needs of the small grower.

PRICES: 4 qt. bags, 55¢; 1/2 bushel bags, \$1.00; 2 bushel bags, \$2.45, prepaid by mail.

PERFECT LABEL

MARK with ORDINARY LEAD PENCIL

Mark with your ordinary lead pencil; it is permanent and will not fade or become unreadable. If you wish to make any changes an ordinary eraser will remove the writing.



PRICES

5 inch; width of marking space 2 inches:
12 labels; \$1.25; 25 for \$2.40; 100 \$9.25
7 inch; width of marking space 2 1/8 inches.
12 labels: \$1.50; 25, \$2.90; 100, \$11.25.

Have you subscribed for SAIER'S GARDEN MAGAZINE? You are missing a lot of cultural information if you have not.

CYPRESS BANDS

CYPRESS PLANT BANDS WON'T STEAL YOUR SOIL NITROGEN

Wood veneer bands have a great reputation for doing that. Chances are that you have seen articles in the trade journals saying that many plants appear unhappy in plant bands.

Wood veneer, being thin, decomposes rapidly. While the band is rotting, large amounts of nitrogen are used in the process.

Cypress plant bands won't rot quickly and therefore does not affect the nitrogen in the potting soil that is needed for the small plants. Paper bands react just like the plain wood veneer bands; and the various coated paper bands, being rather water proof, prevent an even watering of your plants. You will not have NITROGEN STARVED plants when you use our CYPRESS PLANT BAND. A trial order will convince you.

PRICES: (All are packed 1,000 to case, except the 4x4x4, these in 500 and 1,500.

| Not prepaid | Per 1,000. |
|------------------------------------|------------|
| 1 3/4 in. square x 2 1/2 deep..... | 3.80 |
| 2 in. square x 2 1/2 deep..... | 4.00 |
| 2 1/2 in. square x 3 deep..... | 4.60 |
| 3 in. square x 3 deep..... | 5.00 |
| 3 in. square x 4 deep..... | 5.20 |
| 4 in. square x 4 deep..... | 6.00 |

100 bands, postpaid, at 1/5th above prices.

Example: 100 4x4x4 for \$1.20. postpaid, You can make any selection to make 100.

WOODEN POT STAKES

3 inch: 90¢ doz; 250 for \$4.00.

Painted stakes 3/8 inch wide; prepaid.
4 inch: 65¢ per 100; 1,000 for \$4.25.
5 inch: 70¢ per 100; 1,000 for \$4.50.
8 inch: \$1.00 per 100; 500 for \$4.75.
10 inch: \$1.15 per 100; 250 for \$2.50

SPECIAL GARDEN STAKES:

7 8 inch wide, painted white:
8 inch: \$1.30 per 100; 250 for \$3.00.
1 1/8 inch wide; these make an attractive and cheap garden stake.
12 inch: Each 3¢; 25 for 55¢; 100 for \$2.00.

COPPER WIRED TREE, SHRUB TAGS:

3 1/2" long, 5/8" wide, for tagging trees and shrubs; painted white.
70¢ per 100; 1,000 for \$5.50.

CLASSIFIED ADVERTISEMENTS

We wish to make this classified section of special value to our readers who may have plants, roots or any other item that they wish to sell or exchange.

The charge will be 10¢ per line of 7 words, per insertion; four insertions at price of three. When offering plant material know your nursery laws.

SEEDS FOR SALE

DAYLILY SEEDS hand pollinated from choice hybrid reds, rose, pastels. Fresh seed (mixed only) 10 for 30¢; 40 for \$1.00. Ffoulkes, 610 Bryan, Jacksonville, 2, Fla.

AMARYLLIS BULBS

AMARYLLIS GIANT HYBRIDS, mixed colors bulbs, also seedlings, offspring of Dutch and Mead strain. Prices on request. Philip Pate, Kissimmee, 14, Florida. 20

GLADIOLUS BULBS

SPRINGGLADS: Hardy Eurasian Species, fall planted, bloom in spring without thrips. List 16¢ free. Philip O. Buch, Rockaway, New Jersey.

PLANTS FOR SALE

HARDY VIOLETS, Mammoth White, 10 for \$1.00, 100—\$5.00; (Birdfoot) Mixed Colors, 15—\$1.00, 100—\$3.00. Dahlias a specialty. All sizes and colors; 10 largest \$2.50; 10 cutflower type \$2.50; 10 small \$2.00; lovely new \$3.00 dahlia free with each \$5.00 order. April and May delivery; add postage. **SPARKMAN'S GARDEN**, Rt. 1, Scottsboro, Alabama.

MARANTAS and **CALATHEA**, beautiful under-leaf colors; Orchid-like flowers \$1.00 and \$2.00 each. **PAUL A. GIROUARD**, 2710 Lane St., Palatka, Florida.

CURCUMA PETIOLATA (orchid pink ginger or queen lily) Handsome plaited foliage, flowers in mid-summer, exotic cut flowers. In North, dig and store tubers. Large dormant clumps 3-5 yrs. \$1.50 prepaid. Free list. **J. D. MARION**, 214 Preston St., Shreveport, La. 11

EXOTIC DAY LILIES, hand pollinated, choice crosses reds purples, rose, bicolors, pastels. Mixed "sprouted" seedlets (tiny plants) 10 for 60¢; 25, \$1.30; Seed 50, \$1.00; 1-year seedlings (mixed) \$1.25 Doz. Seed: Giant Hybrid **GLOXINIA**; **AFRICAN VIOLETS** 50¢ and \$1.00 pkts; "Easy-do" directions. 100 African Violets, write for list. Leaves 7 for \$1.00; young plants 12 for \$4.00. Ffoulkes, 610 Bryan St., Jacksonville, 2, Fla. 12

ACTINEA HERBACEA (Lakeside Daisy) 3—\$1.25; 10—\$4.00. **Gentiana Andrewsii** alba (White Closed Kentian) 3—\$2.00; 10—\$6.00. Postpaid. **AMERICAN PERENNIAL GARDENS**, Box 37, Garden City, Mich.

DAHLIAS. Beautiful Lemon-yellow colorlette Dahlia tubers; very large and beautiful, 5¢ each, postage paid on orders of \$1.00 or more. **Patatos Purple** (inside out) 5¢ each. **MANCERONA BULB GARDEN**, **MANCERONA**, MICHIGAN.

DELPHINIUMS

The Pacific Giant Delphiniums are very good in the colder sections, even up into Canada but for the South they are disappointing; use *Belladonna* type in zone 7-9. The English Delphiniums are not especially good in the U. S. A.

FELICIA

The Kingfisher Daisy; it has become more popular in recent years but still not grown as much as it deserves.

The species *F. Bergeriana* is a very attractive annual, almost creeping in habit and bearing bright blue flowers with golden centers. Try it in the rock garden or for edging.

If you have a greenhouse, lift some of the perennial species in the fall and winter indoors, when they flower in the early spring.

ADISIA, glossy curled crisped leaves, red Christmas berries; plants \$1.00 to \$5.00 each, postpaid. **PAUL A. GIROUARD**, 2710 Lane St., Palatka, Fla.

POINSETTIA ROOTED CUTTINGS, for Christmas blooming, variety of reds, pink and white, for potting or garden planting. Cultural directions. 25 for \$3.50, 50 for \$6.50, 100 for \$11.00, FOB Kissimmee. Small orders 3 for \$1.00, postpaid. **PHILIP PATE, KISSIMMEE, 14, FLA.** (22)

CUTTINGS: \$1.50 per dozen; house plants mixed or Begonias or Sweet Scented Geraniums, Mints, herbs, wild ferns; prepaid. Mrs. H. C. Sanborn, RFD 1, Thetford Center, Vt.

JOLEUS CUTTINGS, RARE AND FANCY varieties; 50 assorted cuttings \$1.00 plus 20¢ postage. Sultana cuttings same price. A. T. Linder, 521 Nathan Hale Rd., West Palm Beach, Florida. ap

HARDY NATIVE ORCHIDS (Zone IV) Spring and Fall Delivery, Prepaid. Each
Calopogon pulchellus, Grass Pink O. .75
Cypripedium acaule, Pk. Ladyslipper .50
Arctium, Ramshorn Yel. Lady's'r 3.00
pubescens, Common Yel. Lady's'r 1.00
reginae, Showy Ladyslipper 1.00
Goodyera pubescens, Downy Rattlesnake
 Plantain 1.00
repens, Creeping Rattlesnake P 1.50
Habenaria ciliaria, Yel. Fringed Or. 1.00
fimbriata, Large Purple Fr. Orchid 1.25
lucera, Green Fringed Orchid 1.00
psycodes, Small Pur. Fr. Orchid 1.25
Orchis spectabilis, Showy Orchid 1.25
Pogonia ophioglossoides, Rose Pog. 1.00
Spiranthes cernua, (Nodding Ladies Tresses) 1.25
SPECIAL: 4 of a kind for price of 3.
HARRY E. SAIER, DIMONDALE, MICH.

GARDEN ORNAMENTS

CONCRETE GARDEN ORNAMENTS. Many new items. Frogs, Squirrels, Birds, Ducks, etc. Write for my illustrated booklet, price 10¢. **WM. SPECK**, 316 Herkimer, Utica, 4, N. Y.

GROW BIG FLOWERS WITH COLCHICINE, also develop unusual types entirely different. Send \$1.00 for information. **Terrell Nichols**, Box 125, Bowie, Texas.

MANY BEAUTIFUL THINGS are made of durable Mother-of-Pearl, Inlay, Carve, Polish, Jewelry, Thick, River, White, Pink; Instructions. One Pound \$3.50; Two lbs. \$5.25. Satisfaction or money back. Samples \$1.00. **Terrell Nichols**, Box 125, Bowie, Texas.

TEXAS CRETACEOUS FOSSILS and other kinds, attractive, curious, interesting, may be arranged with Cacti. Send \$1.00 for twelve fossils, all different. **Terrell Nichols**, Box 125, Bowie, Texas.

SILENE ALPESTRIS

It forms a fairly compact growth of very sticky stems and bearing long narrow leaves of bright green and ending by branching and carrying pure white flowers with jagged petal edges, that give it a most dainty effect.

It is native of the Carpathian and Tyrol in limestone soils.

GERMINATING EUPHORBIA

Euphorbias are lime haters. It is said they should not be watered with well-water due to the lime content; use only rain water that has been heated to 95 degrees F. They germinate up to 90%.

We have no personal experience in this and it would be interesting to hear from readers who have had practical experience with this genus

Gathering Seed

Harvesting seeds sometimes can be made work but as a rule it is very easily done. On seeds that have a dry shell or seed-coat, all that is necessary is to wait till the seed has matured, but not too much; then after noon, pick the pods or stems and place in an ordinary paper sack. Do not pack them in tightly; if the stems or pods are rather green it will be best to punch several holes in the bag with a pencil, so that air will circulate freely. Then set the bag up on a or table in a shady building so that the air can get to it. In a week or two, the seed is dry enough to clean; if left too long some seeds, especially those in tight pods, are hard to get clean.

Mice will eat many seeds so it may be necessary to put the seed up so they cannot get to them while drying.

Seeds in berries, like the *Cotoneasters*, *Barberry*, etc. can be dried or cleaned. It usually is best to clean them and this should be done as soon as picked. If the seed coat is rather hard, it will be all right to just run a piece of a board over them; an unplanned board is best. Do not press down very hard but just enough so that the pulp is broken; then place in a crock or wooden pale (away from metal), cover with water and let stand a couple of days, where it is warm, so that it will ferment; the hotter it is the sooner the seed should be washed, don't over do it. Drain off the water by tipping the container over—after stirring it so as to raise the pulp—and thus wash the pulp off that is on top. Put clean water on the seed and repeat till the pulp has all been washed off; poor undeveloped seed will come to the top with the pulp and should be drained off too. Then the clean seed should be placed on cloth and dried well; never place in the direct sun as the seed will lose its color.

Seeds that are in the form of nuts should not be allowed to dry out completely but while they should be well dried before placing in a container, they should be watched as they mould easily. It sending this type of seed to us, they should always be shipped in an open mesh burlap bag.

There are some seeds that snap out of their pods as soon as ripe; *Pansy*, *Euphorbia* and such flowers do this and one has to pick these pods a little on the green side and so as not to lose any, this should be done in the mornings. Seed that shells out of their pods, will have to be watched; if in a paper bag, then not too many and the bag should be shaken to stir the seeds; seed in water, fermenting, should be stirred once or twice a day.

Seed that is being saved for us, should be sent in as soon as it dry enough to mail. We will furnish shipping bags, etc., if you will advise us.

There are many beautiful flowers that seed can be gotten only from sections where the right insect is present for fertilization; thus we have to locate flower growers who have these flowers growing in their yards; it hardly pays to depend on any one going any distance for the seed. We all seem to be too busy these days and it usually is inconvenient to make trips away from home. Remember a very common native may be a real popular flower in another part of the world and it often happens that some native flower is considered an invasive weed while in a different climate it is just the opposite.

Seed that is gathered for us need not be cleaned; we have the necessary machines and screens for this work. The main point is to gather ripe seeds; dry it enough so that it will not spoil and be sure of the correct name; if there is any doubt, then a good description should be given and location of plants mentioned. If they are growing in ones garden, then they could be one of many species but if it is a native wild species this gets its identification down to a few.

SOME FLOWERING PLANTS OF KENYA

(By L. A. S. Grumbley, Kenya, E. Africa)

Firstly, I should explain that this is not the place of the streaming tropical jungles, which so many imagine Central Africa to be. We live at an altitude of 6,500 feet in pleasant rolling country, and the day temperature rarely goes above 85 in the shade and rarely below 45 at night. In fact the climate is temperate, and we grow a vast range of flowering plants, ranging from those grown in England and North America to the truly tropical plants such as Hibiscus and Frangipani. Also, as we have an even rainfall of about 70 inches a year, spread over ten months, the rate of growth of most plants is very fast, and means that you can plant for the present and not for posterity!

on long strings which afterwards form long sausage-like fruits which are most picturesque. It is one tree which cannot be easily confused with other species!

Lastly, I should mention the flat-topped Thorn Trees, which are such a characteristic sight in this country and, indeed, in most parts of Africa. These are of the Acacia family, the most common here being Acacia Lahai or Red Thorn. They are most picturesque and form a fine background for the garden. Being very slow growing, however, they are never planted but only utilised where they already exist. So much for only a few of our trees.

Of flowering shrubs there are a great number worthy of a place in any garden.

cut leaves and large flowers, three or four inches across of a Nanking yellow color with a purple throat. I have this every year for the fine show of color it produces and seed can be collected easily for the next year. A perennial species is Ipomoea beraviensis, which is a rampant grower and has fine bell-shaped flowers, striped with yellow and crimson.

A small creeper well worth planting is Thunbergia Gibsonii, with flowers of a deep golden color, freely produced throughout the year here. Among other Thunbergia species growing wild here are Thunbergia alata, affinis and Battiscombei.

I have mentioned only a very few of our indigenous plants and there are very many more which would merit description but alas my space is very limited. I will describe a few more for you in a future article.

HARDY CLEMATIS

In the book entitled Clematis, by Markham, (listed in the book section) the following species are reported as hardy as far north as Manitoba, where 60 degree below zero Far. are recorded and as reported by F. L. Skinner.

Clematis aethusifolia, latisepta, alpina, alpina siberica, angustifolia, brevicandata, Douglasii, Scottii, Fremontii, fusca, ligusticifolia, macropetala, recta, serratifolia, tangutica, verticillaris, Viorua, virginiana and viticella.

All these species are not difficult to grow. It would be of interest to know if Mr. Skinner has been able to add to the above list since he made the report some time ago. Of course, none of the large flowered Clematis are hardy that far north.

Farther south, at Montreal, Canada, such large flowered varieties as Beauty of Worcester, Henryi, Kermesiana, Jackmanii, Mad. Edouard Andre, Mrs. George Jackman, Nelly Moser, Ramona and Ville de Lyon have proven hardy.

All Clematis species and varieties are increased readily from seed. It would be of value to the distribution of more Clematis, if those having well established plants, not subject to crossing from other varieties close by, would gather seeds. We would be pleased to hear from you.

It must be remembered that seeds of all the thousands of beautiful flowers, all over the world, cannot be raised by one man or even firm and the sources must depend upon amateur gardeners, willing to expend some effort on actual gathering of the seed close at their hand.

DIFFERENT KINDS OF PEAT

The brown spongy peat from peat bogs, is the commonly used type where mention is made of "peat". It is acid due to its water soaked condition and, due to a lack of air, it is in an acid, undecayed condition; its main use is mixing in soils for acid-loving plants. It has great water holding powers.

It comes in various sizes as it is chopped up form the peat beds.

In some countries a grade of peat is used that comes from Heath and Bracken lands. It is entirely different to the peat as found in North America. It comes in a coarse grade full of fibrous but tough, wiry roots and is free of soil. It is used in potting Orchids but Osmunda fibre is now generally preferred.

The main value in the use of peat, other than its being an absolute necessity for peat-loving plants, is its moisture holding capacity. Adding it to the soil mixture, makes it light and retentive of moisture. Whether a fine or coarse grade is used, depends upon what it is intended for. Mixed in seed beds the finer grades are best; in potting soils, a little courser and in out door beds, the real coarse grade will do.

Send 25¢ in stamps for Catalog



Acacia lahai — Great Rift Valley stretching away in distance; White Pyrethrum in the foreground. L. A. S. Grumbley, Kenya.

My own particular hobby is rearing flowering trees and shrubs, so I will concentrate more on these. My wife handles the annual flowers and small perennials.

I suppose one of the most spectacular flowering trees which is indigenous to these parts is the Nandi Flame tree, Spathodea Nilotica. This is akin to the Spathodea campanulata, and bears masses of bright orange-red flowers on its crown. It is a quick grower and is an unforgettable sight when in full flower. It prefers moist conditions, but in deep soil can stand a certain amount of drought as it has a long tap-root.

Another fine wild tree is the Flame Tree, Erythrina abyssinica, a small stiff branched tree which grows up to 20 feet in height, and once a year loses its leaves and produces upright spikes of brilliant flame-colored flowers at the end of the branches. This tree will grow in poor or rocky soil.

A yellow flowering tree is Markhamia Hildebrandtii or the Mho Tree, as it is called by the Africans. This is a husky tree which grows up to 30 feet in height and bears masses of orange-yellow flowers. It has a long tap root so either requires sowing "in situ" or careful transplanting when real young. It is valued for its quick growth, tolerant of differing conditions and flowers for many months of the year.

For a contrast, rather a joke of a tree, is Kigelia Aethiopica or the Sausage Tree. This small tree has large red flowers hanging

The most common flowering shrub here is Cassia didymobotrya, which is to be seen everywhere and is in flower for most of the year. It grows up to a height of six to eight feet and bears upright spikes of six yellow flowers topped with brown. It makes a very effective background shrub.

Of the Bauhinia family, we have a very attractive little shrub, Bauhinia tomentosa, which bears little yellow flowers with a dark brown blotch in the throat and has delicate light green leaves of the typical Bauhinia-type in two lobes.

Another pleasing shrub is the Butterfly Bush, Clerodendron ugandense, which grows up to about ten feet and bears pretty dark and light blue flowers which look very much like small butterflies. Unfortunately it does not seem to set much seed.

Of the Hibiscus family, one attractive species is Hibiscus Greenwayi, with large pendant flowers of a deep yellow. This also grows wild almost everywhere and is a handsome plant. Beware of the foliage, however! This is covered with fine hairs which come off on hands and are an efficient substitute for itching powder!

Oncoba Roulledgei is a large shrub or small tree which is prickly and bears large white flowers with yellow stamens which are of great beauty.

Of our indigenous flowering creepers one of my favorites is Ipomoea dasysperma, a very beautiful annual creeper with deeply

Where are the Flowers?

Probably this question has not occurred to you; we, of course, watch the trend continually. This is necessary with the high catalog costs during these "boom times".

First, flower gardens have changed very much as the auto-age expands; many people spend the few hours after work, driving about the country; a small lawn for which 2 out of 4 yards will have a power mower so that the work can be done with little effort! Evergreens are now very popular as they do make a small yard tidy with practically no work.

Driving around Lansing (Michigan) with a population of close to 100,000, I dare say there are less than 25 real gardens—gardens in which the owner spends some time.

Not only are most of the writers arm-chair gardeners but too big a majority of the catalog requesters, also arm-chair gardeners. I know of one such party who has 2 square rods of space on a 4x10 rod lot on which stands a 6-apartment house with garage for 6 cars! The available space has long ago been planted but this party, who is well along in years and has no particular duties, writes for every catalog issued—sometimes he will buy a package of seed, but 99% is pure waste as far as the catalog people are concerned. Over the country as a whole, there is many well-intentioned people such as is this party but they mainly contribute to the costs, which are already too high.

The main gardens are now on the farms! There more orders with R.F.D. addresses than in the cities and I notice that many of the city addresses indicate that they are on the borders or in the suburbs.

Many catalog people are now making a small charge for their catalog. In our own case this has become necessary, especially because of the information that must be put into our catalog; we feel that for the 25 cent charge, there is more practical information in it than one can get in \$5.00 books; especially is this so in that the information is on the flower one is reading about. One can buy an expensive book on a particular genus and find that 90% of the species and varieties are unobtainable by the reader. Too often writers love to talk about something YOU DON'T HAVE and THEY DON'T THINK YOU CAN GET either!

MICHELIA CHAMPADA

Just as we are about to print this issue, we are in receipt of advice that seed of *Michelia champada* has been sent to us.

This is the sacred "Champaca" a clear yellow flower of the Hindus; the pyramidal shape of this Magnolia-tree is the beauty of the plant.

Araucaria brasiliensis is also being sent.

A CUTE LETTER HEAD

Mrs. D. R. Tolman of Santa Barbara, Calif., has a cute drawing for her letter head. It consists of a sign board fastened to two posts on which is her name and address. She has this just high enough so that she can lean against it with one arm over the top. Standing one one foot with her hoe held at arms length.

This hoe, by the way, does not show much ware! Possibly it's just a new one. Any way it will make you smile when you hear from her.

GERMINATING ACACIA SEED.

An item from Australia advises to "pour boiling water over the seed—sufficient to cover well. Allow to stand 12-15 hours, then drain water off and wash the mucilageous coat from the seed before planting; plant immediately—do not allow the seed to dry out.

By the way, there has been many new species of Acacias or Wattle trees listed in the catalog; these all can be grown in the South.

BAIRNSDALE, AUSTRALIA

Mrs. Blance Stewart (trust I have the given name correct) sends me a pictorial folder or her home town. From the pictures it must be a beautiful place; beautiful buildings; the Main Street with large lawns down the center and all beautifully landscaped.

Australians all seem to be so friendly! I do business in nearly every country in the world and of them all, Australians are the most friendly.

I wish to acknowledge here, too, papers and pictures from Mrs. Joan Matson and pictures of her family from Mrs. Martha Beach. Especialy Christmas cards; they are much appreciated and it would be a pleasure to meet such friendly people.

CRASSULACEAE.

They are shade lovers. Sow seed thinly and the soil should contain good humus.

They being shade lovers they will be found in rock crevices on the shady side; the seed pans should be shaded and in a moist atmosphere.

The mention of germinating seeds being "in the dark" or "shaded", means that the seed in the pan should not be exposed to a bright light; where moisture is important a glass cover is required which in turn is covered with paper; or a board can be used.

CHICKEN MANURE for DELPHINIUMS

R. E. Harrison of New Zealand recommends chicken manure (that has been piled up for at least 6 months) as the best fertilizer for Delphiniums. He also recommends an application of lime in the fall so that the soil may be neutral.

If both lime and manure are used, apply the lime a couple of months before spading in the manure.

I might add to this that oyster shells would be good to use instead of regular lime; the hydrated lime that is usually gotten can cause some soils to become hard, besides with oyster shells, the plant will use what it requires with out the danger of an over-dose of soluble lime being present as is the case with hydrated lime. The course agricultural lime, of course, is fine but usually it is hard to purchase in small quantities.

VENIDIUM

A South African genus with some 18 species of annuals and perennials; resembles *Arctotis*. They are half hardy, standing light frosts.

The main point in their culture is to avoid wet and heavy soils. Grow them as annuals in the North.

IRIS JANE KRAY.

Mrs. Louise Krey Morris of Clinton, Md., mentions in a note on her order: "Reading in your magazine, I notice you list one of my own introductions of Fall-blooming Iris Jane Krey, named for a niece. It was introduced in the early 30's.

That's some 25 years ago! Nice to hear of these things—its really a small world.

SEEDLING FLATS UP IN THE AIR

In Simple Greenhouse Management there is a good suggestion in placing flat of seedlings up on large pots—8 or 9 inch—that they get a much better circulation of air all around them.

Air circulation is very important in indoor growing and especially where there is plenty of moisture. During the day the harm that can be done by insufficient air circulation is not as great as at night when the air becomes colder; it is then that there be some movement and this little suggestion will help to overcome some of the trouble.

OLD ROSES

Mrs. William L. McLaughlin of R.F.D. 1, Newburgh, N. Y. wants *Rosa officinalis*, *grandiflora* and *splendens*, on their own roots. Any reader who can help her, please get in contact with her.

Eern Spores

Being extremely minute and slow to germinate, it is necessary that the medium used should be sterilized. For small sowings a good rich loam soil is good; heat or place in boiling water, allow to cool, then place in a clean glass germinating pan having a close fitting cover. Dust the fern spores thinly over the surface of the wet loam and cover with its lid. Do not water again but place it in a warm shady place and in 2-3 months the surface will be covered with a green mass.

Leave till tiny fronds appear, when the mass can be seperated into little patches and pressed into flats of fresh sterilized soil for growing on.

We expect to offer a rather large list of fern spores in the future; if you are interested in them it would be nice to just mention the fact when ordering other seeds.

OUR WORST WEED

We are well supplied with species of weeds. Of the ones that like US the best is the beautiful Wild Morning Glory; at first it was only in one field! but of late, I notice it has come up into the garden, no doubt so that it can enjoy our company. Then we have Quack Grass! We have IT in the lawn, in the garden, in the fence rows and in all the fields but it is worse in some of the flower beds where only hand spading will get rid of it. In the fields, cultivating both ways as in corn, almost conquers it.

But of all the weeds one can be cursed with comes to us direct from the Minnesota Experiment Station!!! This is their gift to the weed problem—thier NEW PLUMS.

When these first came out some 25 years ago, we got a tree of each; none ever had plums that even the animals would eat and for getting rid of the tree, its impossible. We have two such trees in the chicken yard and each year, at this time, they have to be cut to the ground; they have already grown to 8 feet this year and so close that the chickens cannot get between them. Unfortunately both lots are in yards that are hard to get into with a tractor and plow.

ORNITHOGALUM THYRSOIDES

This is a popular South African species. The cut flowers are shipped by parcel post from the Cape to Europe, by the hundreds of thousands. They arrive with no damage from the sea journey and remain in a fresh condition for 2-3 weeks after arrival. Is there any other flower that can duplicate this?

MINT SAUCE

When making mint sauce, it is a good plan to sprinkle a little sugar on the leaves before chopping. It helps to cut them finer. As a guide, chop up half a dozen sprigs and put in a basin with a similar number of lumps of sugar. Pour over two tablespoonsfuls of boiling water, stir and leave for a while. The boiling water helps to keep the bright green color. Then add ½ pint of vinegar.

With Parsley, pick tender leaves and remove the stalks. For soup or sauce, place in a strainer and plunge for a few seconds in boiling water with a little sugar added. Squeeze dry in a clean cloth and then chop. The Parsley will keep a lovely green. For garnishing, prepare as above, then screw in the corner of a cloth. Hold under cold running water and squeeze. Shake, and the Parsley will fall like a green powder.

(From the Australian Garden Lover.)

CAMPANULA FORMANEKIANA

This is a rare species that grows well in pots as well as in the rockery. It forms a large rosette of leaves and a number of flowering stems, each carrying large white bell-shaped flowers. It is native of the Kaimajalin and flowers in July.

DDT in Your Food!!

On the subject of foods, it is quite often discussed from a personal interest, which may be true or not; this is a report of facts and therefore of vital interest to everyone. We are sorry not to have space in this issue for the entire article but it will be completed in the next issue with suggestions.

The following is a report to the House of Lords in England, made in 1951 and as it says, the conditions are the same as in the U.S.A. It is copied as reported in *Prevention*, published at Emmaus, Pa.

Only two or three generations ago mankind existed upon naturally occurring foods, either eaten raw or prepared by such simple means as roasting or boiling and, in some cases, preserved for further use by smoking or salting. All that is now changed. It is becoming increasingly difficult to find any natural article of food which has not been treated with chemicals, had some part extracted, been exposed to high temperature or preserved for long periods in cold storage, or otherwise processed or tampered with. I do not say that science can never find means of improving foodstuffs, but I do say that the addition of extraneous matters, and especially of **SYNTHETIC CHEMICALS**, should be looked upon with the gravest suspicion and should not be permitted except under the most strenuous conditions. This subject has hitherto received too little attention in this country and the steps taken to protect the public have been hesitating, partial and inadequate.

The gravity of the situation has been revealed in the United States by the well-organized and continuing work of the Federal Food and Drug Administration, which has listed no fewer than **842 chemicals** used or proposed to be used in food. Some are no longer used because they were definitely found to be poisonous. The **majority are still in use, some very extensively**; and in many cases it is not clearly established whether they are poisonous or not. The absolute determination of the toxicity of a chemical added to food requires long and very complex investigations. The chemical may not be toxic in itself, but may combine with substances naturally presented in the body to form toxic compounds. It may be very slow acting but cumulative in its effects. It may be one of those which are stored in the body and the ill-effects of which become evident only after certain concentration has been passed. It may be a racial poison which interferes with reproduction or injures the next generation.

There are two principal ways in which **Danger in the Use of Detergents** chemicals are added to food. One is as an incident of effecting another purpose. This happens when insecticides, fungicides and weed-killers are used in agriculture, and, in some cases, where fumigants or disinfectants are used during process of manufacture or where **detergents** are used for washing food or for washing crockery and food containers. The other is where chemicals are introduced with the express intention of altering the nature of the food or of preserving it beyond its normal life. Besides these there are the cases in which the quality of the food is altered by exposure to very high temperatures causing chemical reactions in its constituents.

I do not propose to deal with the use of artificial fertilizers in agriculture beyond **ent advocates of them, that unbalanced use saving that it is now admitted, even by ardent** of such fertilizers may easily produce a luxuriant plant growth which is also unbalanced; there may be too little protein, and the human being or the animal fed upon this green stuff suffers injury to health or lowered resistance to disease. It is also of interest to note that lack of proper fertilization

renders the plants themselves more liable to fungus diseases and to attacks by insects or other pests, leading to increased use of insecticides and fungicides. It has long been common to use sprays or washes on fruit trees in order to discourage the attacks of mites or insects. A number of these sprays are probably harmless, although, in this whole matter, we should take nothing for granted. Some are definitely toxic; for example, lead arsenate, which, like other compounds of lead, is accumulated in the body with the possibility of its ultimately reaching a dangerous level.

D.D.T in Your Food

I shall say no more about the older insecticides. It is the newer ones, and the enormous extent of their use, which give most cause for alarm. The most famous of these is **D.D.T.** which, since the war, has been applied all over the world **without any adequate investigation of its effects upon health.** It is highly toxic. Test animals rats for example, fed with one part per million of **D.D.T.** perished—and one part per million is equivalent to one teaspoonful in ten tons of food. Not only is **D.D.T.** highly toxic but it is fat soluble. Consequently, it may accumulate in the body fats, through repeated small doses, until a toxic concentration is reached. Or, if this concentration has been approached and, owing to illness or for other reasons, the body is consuming its store of fats, the concentration then becomes toxic and the patient is attacked at the very time when his resistance is lowered. Not only is **D.D.T.** exceptionally toxic, but there is no known antidote. It is absorbed by plants and cannot be removed. Hence, all fruits and vegetables which have been exposed to **D.D.T.** are carriers of it to the consumers. Animals fed on hay or other food exposed to it are affected. Owing to its solubility in fat, milk is especially affected by it. The spraying of **D.D.T.** in cowsheds has been found sufficient to affect the milk, and the U. S. dairy farmers have been officially advised not to do this. **Butter sold on the New York market has been found with as much as thirteen parts per million of this dangerous drug.** The fact that **D.D.T.** has such an affinity for milk constitutes a serious danger for infants, and for young children who are encouraged to drink large quantities of milk. Even breast-fed infants are not safe, for mother's milk has been found containing appreciable quantities of **D.D.T.**

The New Poisons

Other extremely toxic substances are now being used as insecticides, such as **H.E.T.P., T.E.P.C.** and parathion. They were invented during the war as gases but not actually used as such. They are so dangerous that those who use them must be covered from head to foot with protective clothing. Already a number of fatal accidents have occurred to farm workers spraying with insecticides. This has engaged the attention of the Ministry of Agriculture, and a working party under the chairmanship of Prof. Zuckermann has recently reported on this aspect of their use. Unfortunately, little is known of the effect of these chemicals on the foodstuffs to which they are applied or upon the health of the men or women who consume the foodstuffs. There are on record, however, at least two cases in which people have developed illness which appeared to be due to **flour containing one part per million of parathion.** The illness ceased upon another flour being used in which none of this poison was found.

I may also remind you that when fruit trees are sprayed about 95 percent of the spray fall on the ground; and if this ground should be used for growing other crops, those crops will receive a far higher con-

centration of the poison than the fruit trees. In the U.S. in the year 1947 no less than 150,000,000 pounds of insecticides were produced. This is practically one pound per head of the population; and if only a small fraction of that finds its way into the human body the cumulative results **may be catastrophic!**

Before I leave the agricultural side of this matter I should like to mention the use of antibiotics and hormones. As a result of treating an inflammation of the udder of one cow with penicillin, the milk was affected to such an extent that it destroyed the organisms essential for cheese-making when mixed with that of **200 other cows.** An indirect result of consuming milk thus infected with penicillin or other antibiotics is that the consumer might perhaps become resistant to this remedy in such fashion that, if it were prescribed for some illness, he would receive no benefit. Another example is the use of hormone powder, called **tuberite** for the purpose of suppressing the sprouts of potatoes. I do not know whether it is for this or other reasons that in recent years it has become almost impossible to purchase potatoes of good quality in London. (and the same can be said of the U.S.A.—Ed.) Other hormones are used as weed-killers, but it does not follow that, because they have a selective action on weeds, they do not affect other plants and **the persons who consume them.** It is well known that hormones are extremely potent in very small quantities and may have most dangerous effects.

Imported food is as liable to be affected as home-grown food. I have heard of oranges being sprayed with **D.D.T.**, the fruit when picked being dyed and then waxed. (he could add, too, 'and picked GREEN'—Ed) I should not like to eat marmalade made from fruit so treated. Recently, I noticed that a proposal is under consideration for preventing the spread of swollen shoot disease among the cocoa trees of the Gold Coast. The principle of it is that the sap of the tree should be induced to imbibe a poison that will kill the mealy bug by which the disease is transmitted from tree to tree. The idea is ingenious, but what effect will the poison have upon the cocoa bean, upon the cocoa derived from it, and upon the health of the consumers of cocoa and chocolate in this country and elsewhere?

What's in the Bread You Eat?

Let us now deal with the use of chemicals in the processing of foodstuffs. Various chemicals are used to bleach flour, because it is said that the **public insist upon having absolutely white bread.** It is somewhat strange that they do not insist upon having many other articles of food bleached also. Some chemicals are used for "maturing" flour in the space of a few hours, whereas nature takes weeks to affect this, and also for giving to inferior flour the characteristics of better flour. Others are used for the purpose of inducing flour to rise more in order to produce a loaf which contains more air and water, which may be rather dearly bought in this way.

The most widely used of these so-called "improvers" of flour is nitrogen trichloride, commercially known as agene. After this chemical had been in use for about a quarter of a century, its toxic effects were discovered by Sir Edward Mellanby. The remarkable thing is that this discovery, like many other notable scientific discoveries, was made almost by accident! Professor Mellanby noticed that dogs which were being kept for another experiment were developing nervous disorders, which became progressively more grave and ended in epileptic seizures and death. In a research which is classic of its kind, he traced the causes of the illness to food made from **flour which had been treated with agene!** His results were published in December, 1946. They were taken notice of immediately, **BUT!**

(Continued in next issue)

- THE LIMITS OF THE
AVERAGE ANNUAL MINIMUM
TEMPERATURES FOR EACH ZONE**
- Zone 1 In Northern Canada
- Zone 2 -50° to -35°
- Zone 3 -35° to -20°
- Zone 4 -20° to -10°
- Zone 5 -10° to -5°
- Zone 6 -5° to 5°
- Zone 7 5° to 10°
- Zone 8 10° to 20°
- Zone 9 20° to 30°
- Zone 10 30° to 40°

From this map determine what zone you are in. The number listed beside each variety in this catalog indicates the zone in which that variety will be hardy. Every variety that carries your zone number or a smaller number should be hardy in your area. If you went to take a chance on those rated one zone greater, there is a good possibility of success.

